

**General:**

[File formats and CODECs](#)  
[Classroom](#)  
[Camcorders](#)

**DC10+:**

[Getting Started](#)  
[Capture!](#)  
[Edit!](#)  
[Movie Time!](#)  
[Hints and Resources](#)

**StudioDV:**

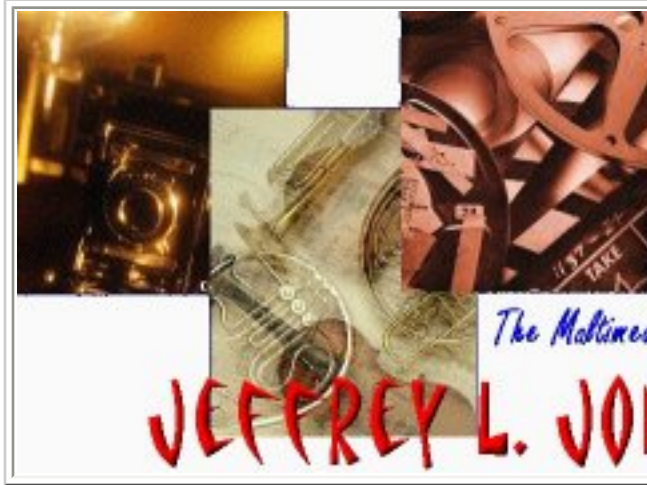
[Getting Started](#)  
[Capture!](#)  
[Edit!](#)  
[Movie Time!](#)  
[Hints and Resources](#)

**Video Applied:**

[The Web](#)  
[PowerPoint](#)

**Elsewhere on this site:**

[General Instructional Technology](#)  
[Presentation/Web Imaging](#)  
[Sound](#)  
[Video](#)  
[Home](#)



# Video:

## File Formats and CODECs for Video Computer Files

This document gives a general introduction to the world of computer-delivered video. It is assumed that you will be using some sort of video editing software which gives you some choices. The most common in Fayette County Public Schools are the Pinnacle Systems Studio products, but there are lots of others.

Unlike images, which are almost invariably GIF or JPG format (especially when aimed at the Web), video file formats are not quite so universal. In addition, since uncompressed video files are quite huge, some compression is almost invariably required.

To further complicate things, there isn't universal agreement on compression algorithms, called *codecs* (for "COmpression/DECompression"), so there are choices to make. If your end result will go on the Web, you're stuck - the bandwidth available from most school systems will not support uncompressed full-screen video, so compression is necessary. Even if you intend to use your video clip in a PowerPoint presentation or other document, file size can severely slow down your presentation. Predicting final file size is quite difficult, since compression and other issues vary wildly. You just have to pay attention!

**The Video Soundtrack:** Sound can be adjusted for quality. Video software doesn't generally handle compressed sound formats like MP3, so WAV format it is. Hence, the controls are the same as your Windows Sound Recorder (see [Sound Formats](#)): 16-bit stereo or mono, 8-bit stereo or mono, at a variety of bit rates. CD quality is 16-bit at 44 kbps, but so-called "radio quality" (8-bit at 22 kbps) monaural is fine for anything posted to the Web or played in a PowerPoint presentation.

**Video Window Size:** 640X480 pixels at 30 frames per second approximates





standard broadcast quality – and will completely destroy Web bandwidth for anything over a second or so. A video at ¼ dimension screen size (160X120) and 10-15 frames per second is fine for web-delivery if compressed, and will look fine in a PowerPoint presentation as a slide insert (rather than full-screen). Experiment, and see what file sizes various choices produce.

See the insert for choices of CODEC.

### *The formats:*

**MPEG (.mpg):** This digital video format is very high quality with good compression, and will play natively on either Windows or Mac without worrying about CODECs. However, not all video editing software will convert your video to this format (Pinnacle DC10+ doesn't).

**Windows AVI (.avi):** AVI files will play on other platforms with players, but are generally associated with Windows machines.

Uncompressed AVI files will run on any Windows machine with a decent video card, but

even at low frame sizes and rates, the size of such files tend to be large. For example, a QuickCam file, produced at 160X120 pixel frame size, and 10-15 frames per second, will be perhaps 20 megs for 15 seconds or so. That's a very big file. Compression is desirable (see Codecs above).

**QuickTime (.mov):** The QuickTime movie format is provided by Apple Computers, and they support it. It is a very good format, and a QuickTime player is available for Windows machines. Adobe Premiere provides conversion to this format, as does DC10+. However, since the player isn't bundled with Windows, you must make sure the computer on which you run the video has the player, available from Apple's website at <http://www.apple.com/quicktime/> If you intend to

### CODEC – AVI:

✓ **Indeo:** There are several versions, 4.X being perhaps the most universal, though the latest CODEC download from Ligos will cover all versions. Although this is as close to a standard CODEC for AVI as you'll find, you should still provide a link on your page to <http://www.ligos.com/>, for anyone for whom the file fails to play.

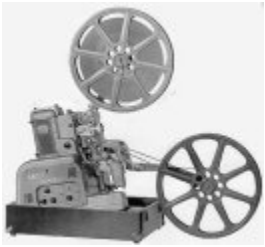
✓ **Pinnacle Systems:** I put this CODEC in only because there are so many DC10+ capture systems in the schools, and this is the one it uses. Do *not* use this CODEC! Your video will only run on other DC10+-installed machines!

### CODEC – QuickTime:

✓ **Cinepak by Radius:** This one is supported on both Mac and Windows platforms, and so should be considered universal for this format. You should *not* need to install it separately from the Quicktime player.

deliver the video via the Web, be sure to supply a link.

**RealMedia (.rm):** RealMedia provides one of the oldest and most widespread (85% of all web-accessing computers have RealPlayer installed) Web delivery formats. Many of the tools to code and deliver RealMedia video files are free for download - including RealProducer which encodes other formats to Real, and RealServer Basic which delivers these files more dependably than ordinary links and webservers (including multi-streaming which customizes delivery based on connection speed). Both Pinnacle Systems' most recent programs and Adobe Premier will encode to this format. As with QuickTime, RealPlayer is required for Real files to run on a client workstation. RealPlayer Basic is free and available from <http://www.real.com>. The only downside of using Real is the aggressive nature of their marketing - this can be avoided by a non-default install of RealPlayer. I provide an [installation walk-through for RealPlayer 8.0 Basic](#) which sidesteps much of this.

**General:**

[File formats and CODECs](#)  
[Classroom Camcorders](#)

**DC10+:**

[Getting Started](#)  
[Capture!](#)  
[Edit!](#)  
[Movie Time!](#)  
[Hints and Resources](#)

**StudioDV:**

[Getting Started](#)  
[Capture!](#)  
[Edit!](#)  
[Movie Time!](#)  
[Hints and Resources](#)

**Video Applied:**

[The Web](#)  
[PowerPoint](#)

**Elsewhere on this site:**

[General Instructional Technology Presentation/Web Imaging](#)  
[Sound](#)  
[Video](#)  
[Home](#)



E-mail



The Multimedia World of

JEFFREY L. JONES

# Video:

## In The Classroom (and the School)

Although the title of this section is "In the Classroom," the wonderful thing about video production is that it gets your students *out* of the classroom, and into the world! It also utilizes a lot of student interests and abilities at once - that class clown who never did any work for you may catch fire and participate if it gets him on camera!

However, just as PowerPoint can be abused horribly ("OK, class, your project this week will be to go to the computer lab and do a PowerPoint on the rain cycle. Any questions? No? Good!"), so can video projects. Care is required!

1) Give the assignment structure! Storyboarding is a wonderful way to organize projects. All of the below websites are examples of storyboarding - the process of pre-planning video shooting and editing using sketches or text. Kids don't like to pre-plan, and the results is often lots of wasted time and disorganized video projects. These links can help!



- [http://www.sarasota.k12.fl.us/bhs/bryan/bryan\\_story2.html](http://www.sarasota.k12.fl.us/bhs/bryan/bryan_story2.html) (An example supplied by Sarasotta County Schools)
- <http://www.chumpchange.com/parkplace/Video/Storyboard.htm> (text-only story board examples [good and bad] posted by consultant Laura Ricci)
- <http://www.hindsightproject.com/video/musicvid1/> (crude image storyboards used in actual music video productions)
- <http://www.conknet.com/hhs/library/storyboard.html> - from Hopkinton High School in New Hampshire - this site has a

**Examples of video on the Web:**

[Giggle Poetry \(December TIPS\)](#)

[Petroleum Products \(January TIPS\)](#)

[Animations \(February TIPS\)](#)

[PD on Windows2000](#)

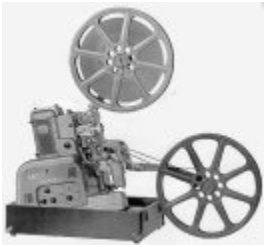
[Stop-action animation \(February TIPS\)](#)

[Video PowerPoint \(March TIPS\)](#)

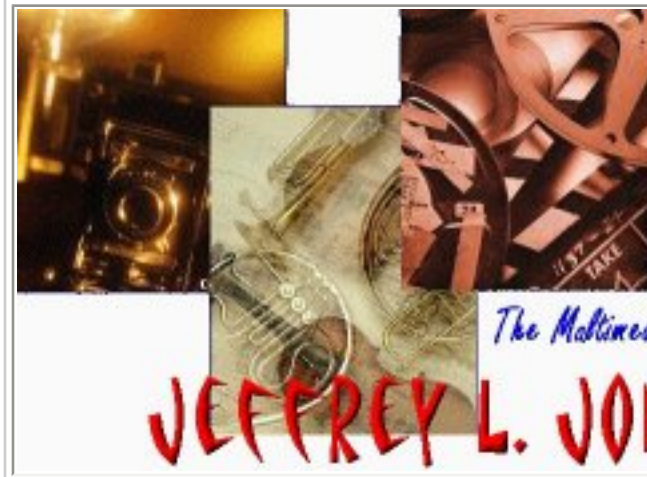


template!

- 2) Make the project collaborative or whole-class. To the best of your ability, make sure all the good writers aren't in one group with all the class clowns/performers in another! Video production can utilize a lot of different skills, but some forethought is required to assure finish products.
- 3) Allow a lot of time for the project, but force a deadline. Video takes time, but not as much as our young producers would want! Limit video shoots, and make sure they've organized what they are shooting before they start.
- 4) Don't assume that a video must be an end in itself - video clips do well on web page projects and other presentations! It is quick and easy to capture and shoot to file video clips if a lot of editing isn't involved.

**General:**

[File formats and CODECs](#)  
[Classroom Camcorders](#)

**Video:****Camcorder thoughts and ideas****DC10+:**

[Getting Started](#)  
[Capture!](#)  
[Edit!](#)  
[Movie Time!](#)  
[Hints and Resources](#)

**StudioDV:**

[Getting Started](#)  
[Capture!](#)  
[Edit!](#)  
[Movie Time!](#)  
[Hints and Resources](#)

**Video Applied:**

[The Web](#)  
[PowerPoint](#)

**Elsewhere on this site:**

[General Instructional Technology](#)  
[Presentation/Web Imaging](#)  
[Sound](#)  
[Video](#)  
[Home](#)

**Camcorder formats**

Below is a chart displaying the several camcorder formats and their advantages and disadvantages in the field, and when used in conjunction with a computer-based capture system. It should be remembered that VHS, VHS-C, and 8mm are all analog formats, and hence will only work with analog capture systems such as Pinnacle's StudioAV or StudioDC10+. Digital formats - miniDV and Digital8 - can be used with both digital (IEEE1394/Firewire) or analog capture systems, though the former is much easier and gives much higher quality results.

<b>Format:</b>	<b>VHS</b>	<b>VHS-C</b>	<b>8mm</b>	<b>miniDV</b>	<b>Digital8</b>
<b><i>Advantages in the field</i></b>	Large enough to feel like pro gear	Inexpensive	Inexpensive	Most common digital format - high quality	Also high quality, with added advantage that the tapes are inexpensive (ordinary 8mm).
<b><i>Advantages in an editing environment</i></b>	Tapes can be used with any VCR, so you don't need to tie up your camcorder when capturing	With an adapter, tapes can be used in any VCR (see VHS)	None	High quality, digital interface gives direct control over camcorder	see miniDV



E-mail



<b>Disadvantages</b>	Quality not great	Lowest quality.	Quality not great, and unlike VHS/VHS-C, you must tie up your camcorder for capture.	Somewhat more expensive. Tapes are also expensive. Although miniDV VCRs are available, they're also expensive, and so you must tie up your camcorder for capture.	Format is unique to Sony Digital8 camcorders - no other brand of camcorder uses this format or will play Digital8 tapes.
----------------------	-------------------	-----------------	--	---	--

## Dealing with Sound

Sound is tough. The microphones built into most consumer-grade camcorders are usually good enough quality for speech. They have three main disadvantages:

**Location.** They're mounted permanently on the camcorder, hence they work best when your subject is close - not always convenient, and frequently not even possible. Hence you'll pick up every other noise around you.

**Volume control.** Camcorders provide automatic volume control, which works OK in general, but produces some odd problems when taken with the "location" problem above - if, for example, an air conditioner is running quietly in the background, as soon as your subject stops talking, the automatic volume control takes over and boosts the air conditioner noise until it dominates the sound track!

**Physical interface.** Since consumer-grade camcorders use 1/8" mini-plugs for their external microphone interface (see [DC10+ Getting Started](#) for a discussion of plug styles), you are severely restricted in what microphones you can use which will plug directly into your camcorder.

### Solutions:

- **Pro-grade camcorder and pro microphones.** Perfect for that deep-pockets-budget video program! Out of reach for us common folk . . .
- **Long-cord, mini-plug lavalieres and microphones.** They're out there - I purchased my 20'-cord mini-plug lavalier for \$20 on eBay - but are quite hard to find.
- **Adapter + pro-grade microphone.** Don't be intimidated by "pro-grade microphone" - they can be purchased for \$20 or less. But they require an XLR (three-prong) plug, which means you'll need an adapter. You can purchase, or have made up, adapters, but be careful - an adapter that places any weight near the mini-plug socket on your

camcorder will quickly destroy that socket. That's an internal camcorder repair!

- **[Beachtech mini-mixer](#) and pro grade microphone.** There might be other products like the Beachtech out there, but I haven't found them! They bolt to the tripod socket of your camcorder (they also have a socket, so you can still use your tripod), provide two XLR connection points for any style microphone (you can also use a line-in), and the output is a mini-plug for your camcorder. Works really great! It's not cheap (around \$200, though prices vary wildly), but it's worth it if you intend to be able to easily hear speech.



**General:**

- [File formats and CODECs](#)
- [Classroom Camcorders](#)

**DC10+:**

- [Getting Started](#)
- [Capture!](#)
- [Edit!](#)
- [Movie Time!](#)
- [Hints and Resources](#)

**StudioDV:**

- [Getting Started](#)
- [Capture!](#)
- [Edit!](#)
- [Movie Time!](#)
- [Hints and Resources](#)

**Video Applied:**

- [The Web](#)
- [PowerPoint](#)

**Elsewhere on this site:**

- [General Instructional Technology](#)
- [Presentation/Web Imaging](#)
- [Sound](#)
- [Video](#)
- [Home](#)



E-mail



# Video:

## Pinnacle Systems StudioDV - Getting Started

### I. What do I need to edit video?

- A computer. According to Pinnacle, the minimum system requirements include: Pentium 300 or compatible PC or better with one free PCI slot, 64MB RAM, DirectX compatible graphics and sound card, DirectX 5.0 (or higher) compatible sound card, mouse, Windows 98 or higher, 200MB free disk space required to install software, 200 meg per minute of finished video (you can save hard drive space by capturing at preview quality - see Capture).



You can purchase the computer and capture system together and factory-supported from the **Accent Computers** KETS purchase spreadsheet, though separately they're cheaper.

**Having said that** - you won't be

happy with a computer with the minimum requirements. A Pentium III will greatly speed up processing, and you should have a *minimum* of 128 meg of RAM. Older hard drives don't have a fast enough transfer rate to capture at the best quality - if you're not sure, Pinnacle offers a test program as a download from their website.

- Pinnacle Systems StudioDV (includes IEEE1394 - so-called "Firewire" - capture card and software)



- A digital camcorder (nope - can't use an analog or a VCR!)

## **II. How do I install StudioDV?**

Since the Firewire card has to go into a slot, you have to open the computer box. However, if you make sure the Pinnacle CD is in the tray when you re-boot, it will pretty much install itself. If you're installing this in an other-than-brand-spanking-new computer, make sure your video and sound card drivers are current (see your school tech coordinator if you're unsure).

## **III. How do I hook it all up?**

In contrast to the wonderful world of analog capture, the Firewire interface handles video and audio, as well as camcorder controls. Hence you won't have to unplug your speakers to shoot to tape! Life is good!



**General:**

- [File formats and CODECs](#)
- [Classroom Camcorders](#)



# Video:

## Pinnacle Systems StudioDV - Capturing Video

**DC10+:**

- [Getting Started](#)
- [Capture!](#)
- [Edit!](#)
- [Movie Time!](#)
- [Hints and Resources](#)

**StudioDV:**

- [Getting Started](#)
- [Capture!](#)
- [Edit!](#)
- [Movie Time!](#)
- [Hints and Resources](#)

**Video Applied:**

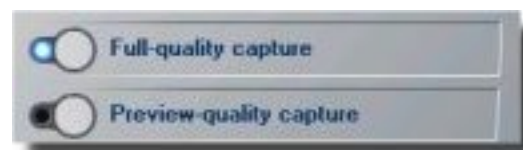
- [The Web](#)
- [PowerPoint](#)

**Elsewhere on this site:**

- [General Instructional Technology](#)
- [Presentation/Web Imaging](#)
- [Sound](#)
- [Video](#)
- [Home](#)

## I. Settings

Since StudioDV works completely in the digital domain, there's two general categories for capture: full quality, and preview quality. If you so intend, *the final project will be full quality regardless of which you select here*. Here's a chart with the trade-offs:



<i>Full Quality</i>	<i>Preview quality</i>
captured files are uncompressed (full quality)	captured files are compressed (lower quality)
Uses the most hard drive space	Uses the least hard drive space
Final project can be produced with the computer alone.	Full-quality final project requires the camcorder and original tape to be connected during rendering.
Best if you intend to use the captures directly (without editing), and need full quality (unlikely)	Best if you intend to use the captures directly (without editing), and need smaller files.

If you have the hard drives space, full-quality is somewhat easier. However, if you just want to produce quick compressed captures of video clips (for use in PowerPoint for instance), use "Preview quality" - you can select a variety of CODECs under "Settings" (see [Formats](#) for a discussion of CODECs). Some experimentation is required!

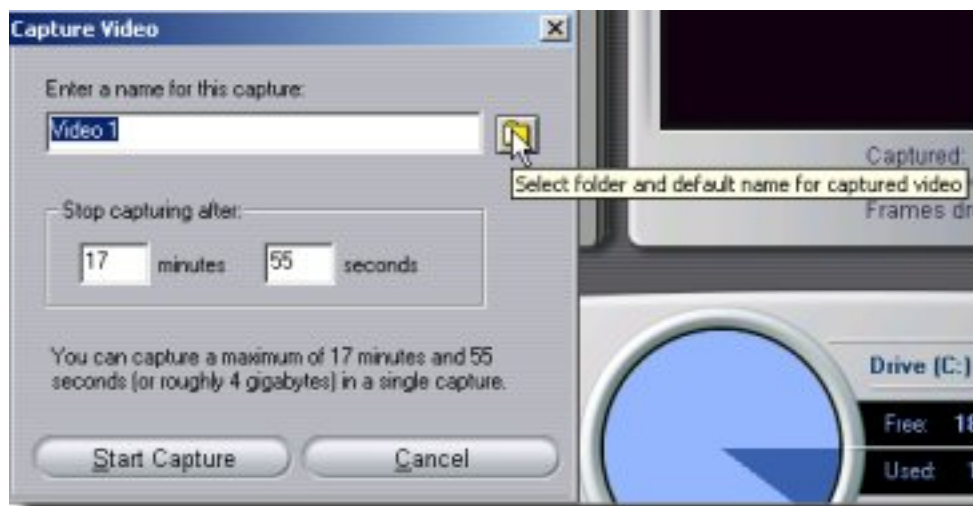
The initial screen shows available disk space. If it's below 20% or so, think about cleaning things out. The less the space, the slower things run! Also, *defrag regularly!*

## II. Capturing





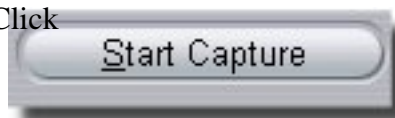
With Firewire-based systems, all camcorder controls are right there on the screen, so capture is a breeze. Hook up the camcorder to the Firewire cable, and turn it on to VCR. Play the video tape you intend to capture. It should show in the screen in the upper right hand corner. If your speakers are hooked up to the "Line out" on your sound card, you should also hear sound. If either of these things is not happening, they won't be happening in your capture file either! Fix it now!



It's best to capture scene by scene, creating new files for each. It's also a good idea to set a file location for all of the captures which is unique to the project - on your first capture, click on the little file cabinet and create a folder. Capture about 5

seconds of "pad" before and after each scene - this isn't the time to be accurate, and you'll need the extra seconds later. Enter a filename. If you call your first scene "Scene 1" (with a space between "Scene" and "1"), it'll automatically call your second capture "Scene 2". Remember that the DC10+ default file location is whatever was used last, so if someone else uses the machine in between capture sessions, you'll need to reset the file location.

- Using the camcorder controls in StudioDV, locate a spot well before the scene you intend to capture, and stop.
- Click the "Start Capture" button.
- Choose your file location and name (see above).
- Click "Play".
- Click



"Start Capture"

- Allow capture well past the scene's end, and click "Stop capture" (that button will be where "Start Capture" was to start with). Studio DC10+ will automatically detect scenes within each capture, and show each as separate parts of a captured file.
- Repeat for each scene. If you see any dropped frames in the view window after a capture, give it another try for that scene.



**General:**

[File formats and CODECs](#)  
[Classroom](#)  
[Camcorders](#)



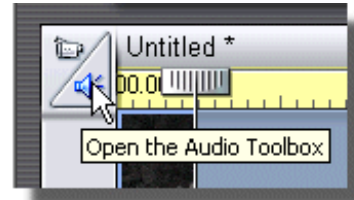
# Video:

## Pinnacle Systems Studio DC10+/DV - Editing Video

**DC10+:**

[Getting Started](#)  
[Capture!](#)  
[Edit!](#)  
[Movie Time!](#)  
[Hints and Resources](#)

The differences between Studio DC10+ and StudioDV are small enough that both are covered here. One small difference: The Tool Box is just one thing in DC10+ - in StudioDV Pinnacle has split them into two - one for sound one for video. Before you go any further, go to "File/Save as..." and save your project in the same location as your scene clips. Since video editing is a resources-hungry process, you *will* face lockups and other problems. "Save early and often" was never more important!

**StudioDV:**

[Getting Started](#)  
[Capture!](#)  
[Edit!](#)  
[Movie Time!](#)  
[Hints and Resources](#)

You have three editing views, clickable on the middle/far right of the main window:

	<b>Storyboard:</b> The scenes are arranged in sequence, and there's no representation of time.
	<b>Timeline:</b> Time is represented graphically, so shorter scenes occupy less space.
	<b>Text:</b> This gives a simple list of the components of your project.

**Video Applied:**

[The Web](#)  
[PowerPoint](#)

Storyboard is easier for rough construction, or whenever you need to select a scene that appears quite small on Timeline. Timeline gives a better visual representation of your project in time, and is the only environment that gives access to all the layered items (sound, titles, etc.) at once.

**Elsewhere on this site:**

[General Instructional Technology](#)  
[Presentation/Web Imaging](#)  
[Sound](#)  
[Video](#)  
[Home](#)



## I. Rough construction

Find each of the scenes you captured through the file window. Drag and drop them onto the Storyboard or Timeline in the order in which you want them to appear. If you get anything wrong, or change your mind, you can simply drag and drop them from one location to another at any time.

## II. Scene editing

Click on a scene. Click on the "toolbox" icon at the left (in DV, it's the "Video toolbox"). You can then play the scene



in the view window. The green marker marks the start point of your video clip, and the red marks the end—since you captured more than you needed, you'll have to adjust this. You can drag the green and red markers, and use the play controls to test your selections. You can also run the scene from its beginning, and simply click on the green and red brackets under the edit windows at the instance you want the clip to start and stop, or adjust using the up and down arrows which move one frame at a time. Close the toolbox when you're done.



### III. Transitions

With the toolbox closed, click on the "Transitions" tab. Select a transition—double-clicking on them will cause them to run in the view window, showing what they'll do. Drag and drop them in between two scenes to use. Adding transitions **actually shortens your project**, since the transition overlaps a portion of the two scenes involved. You may have to adjust the scene lengths again to make sure things appear as you want. This

is why scenes need pads on either end!

### VI. Titles



Titles come in two types—full-screen, and overlay. Full-screen titles are just like film clips (drag and drop one on the timeline or storyboard anywhere), except that you can make them longer or shorter simply by dragging them in the timeline. You can create them from scratch from the toolbox, or - somewhat easier - select one in the "Titles" section of Editing (toolbox closed) which pleases, and double-click on your selection (which opens **TitleDeko**, the title editor) to edit the text. It's a good idea to place a 5-second or so full-screen dummy title at the beginning, so that cueing the video is easier - be really clever and put a five-second countdown! Backgrounds can be a solid color, or a digital picture (see "Select Background" in **TitleDeko**).


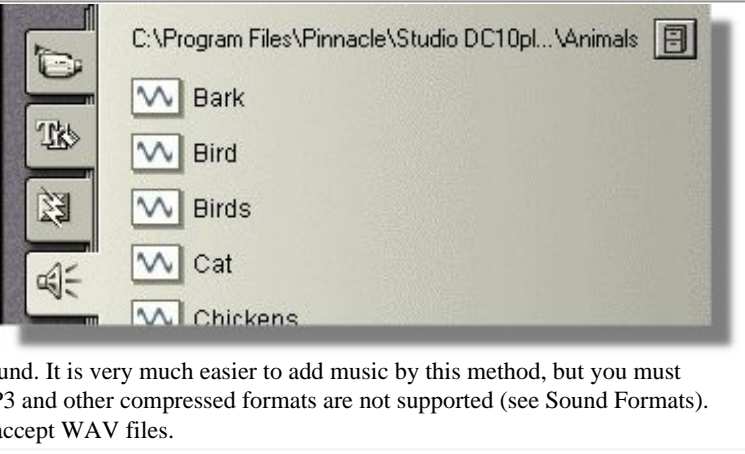


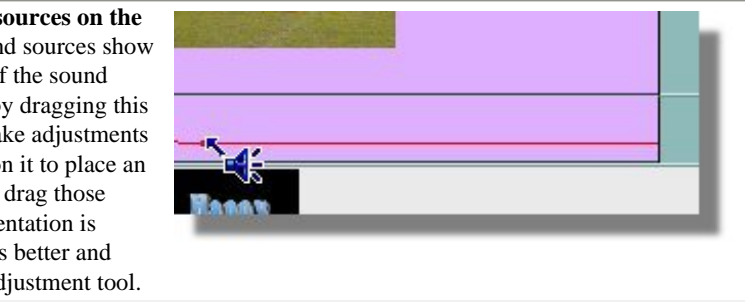
If you want the title as an overlay, you must be in Timeline view. Drag the title into the Title Overlay channel (it's below the video channel). Again, you can shorten and lengthen it as you see fit. Do not use a background, or your video will be completely covered up!



Transitions can be applied to titles as well - both as full-screen titles and as overlays - by dragging the transition to the beginning or ending of the title (remember that overlays are only visible in Timeline view). Titles can also be used to insert digital pictures as stills into your project - insert the picture into the title as a background or insert, and remove all the text.

### V. Sound

Icon	... in ...	Application
	Toolbox	<b>1) Adding Voice Overlay:</b> Use the Toolbox option for this. It is best to use a headset with earphones, since the presence of speakers near a microphone will give feedback. It is possible to use the camcorder as a microphone if it's still connected, but you should still use headphones.
	Toolbox	<b>2) Adding sound from CD:</b> If you use this method, <i>do not use more than one CD per project</i> , as DC10+ can't be depended upon to identify which it needs. Also, you must have the CD in the CDRom tray when you render - don't choose a music selection and then finish the project after the student has taken his CD home! Editing CD selections is very much like editing video scenes with the toolbox. If you want easier and more dependable control over music, use "Adding sound from file".

	Editing (toolbox closed)	<p><b>3) Adding sound from file:</b> DC10+ accepts sound files in .WAV format—the default sound format of <i>Windows</i>. DC10plus also gives a collection of sound effects and music in their package which you can use—browse to effects through the file window (they're in the "Sound Effects" folder in C:\Program Files\Pinnacle\StudioDC10Plus).</p> <p>Drag and drop your selections onto the Timeline channel marked for sound. It is very much easier to add music by this method, but you must convert it to WAV format first - MP3 and other compressed formats are not supported (see Sound Formats). The "Music" timeline channel will accept WAV files.</p>	
	Toolbox (may need Pinnacle installation CD)	<p><b>4) Adding music using DC10+'s automatic music tool:</b> If you are using this video project for other than classroom instructional purposes, your music cannot be copyright protected, or you must have secured permission for its use. DC10+ provides some free-to-use canned music files which sidestep this problem. The tool has the added advantage of automatically tailoring your music selection so that it seems to fit exactly in the timeframe you choose, with beginnings and endings included to give this impression - you will not need to use fade-outs and fade-ins to control time span. Simply select the musical style you wish to use, drag and drop it on the timeline, and drag to expand or shrink it to cover your chosen time span. DC10+ will automatically generate a musical excerpt that exactly covers the time you choose. Be forewarned - if you did not do a full install of DC10+, this option will ask for the DC10+ CD.</p>	
	Toolbox	<p><b>5) Adjusting volume of all sound sources in "real time":</b> The sound volume selection in the toolbox allows you to play your video project and adjust volume in real time as the video plays. Three volume tools are given to give control over video sound, sound effects, and music.</p>	
none	On timeline	<p><b>6) Adjusting volume of all sound sources on the timeline:</b> In Timeline view, all sound sources show volume as a red line in the middle of the sound window. Volume may be adjusted by dragging this line up and down. If you wish to make adjustments at isolated points on the line, click on it to place an editing point (a square red dot), and drag those points up and down. Some experimentation is required to get used to it, but it gives better and easier control than the "real time" adjustment tool.</p>	

## VI. Adding stills

To add a still picture you have created as a GIF or other video image format, add it as a title and insert the picture into the blank title frame.



To capture a still picture from the video, use the capture tool in the toolbox - this tool allows you to select a still frame from your video project by clicking a button as the video plays. It then gives you the option of inserting it in your project, or saving it as a separate file. The latter is how you can grab a frame for use as a hyperlink if you intend to use the video on a web page.

## VII. Watching the entire project

You can watch your entire project from the Timeline. Make sure that transitions don't cover parts of scenes (remember, you've got extra footage at the beginning and end of each scene to help with this). Make sure the overall video is the right length, the sound effects are well-timed, and the title overlays are visible and don't cover anything important.



**General:**

- [File formats and CODECs](#)
- [Classroom Camcorders](#)



# Video:

## Pinnacle Systems StudioDV - Movie Time!

**DC10+:**

- [Getting Started](#)
- [Capture!](#)
- [Edit!](#)
- [Movie Time!](#)
- [Hints and Resources](#)

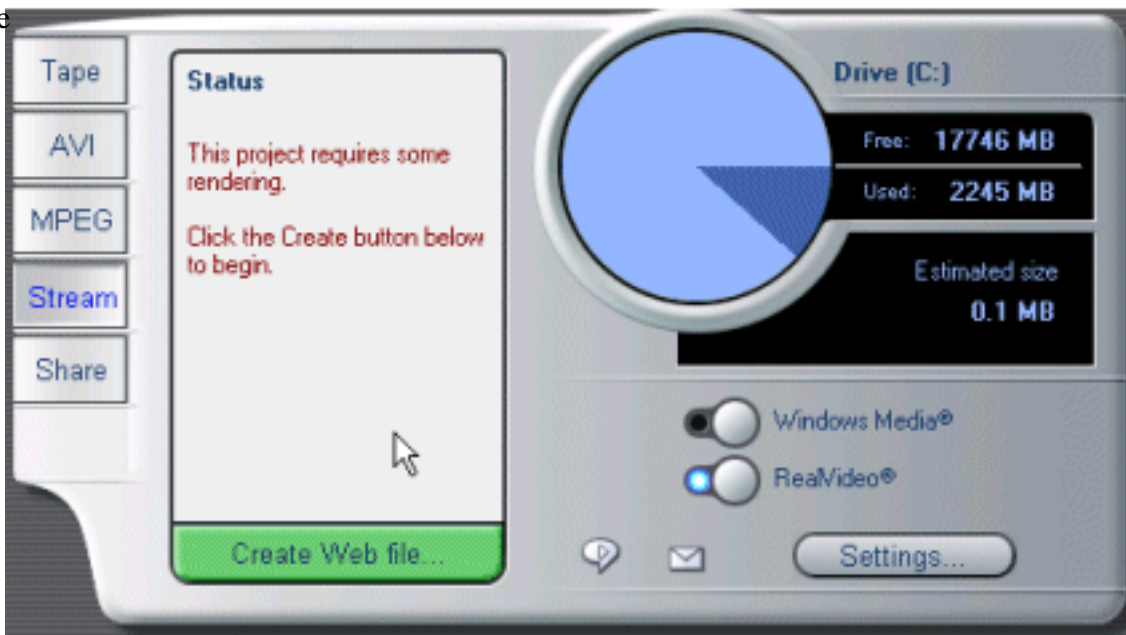
**StudioDV:**

- [Getting Started](#)
- [Capture!](#)
- [Edit!](#)
- [Movie Time!](#)
- [Hints and Resources](#)

**Video Applied:**

- [The Web](#)
- [PowerPoint](#)

We're now



**Elsewhere on this site:**

- [General Instructional Technology Presentation/Web Imaging Sound Video, Home](#)

ready for the "Make Movie" tab. You have two choices - shoot back to tape, or create one of three video format files. If you have captured using "Preview quality," or you intend to produce files, this last process will require a lot of work by your computer, and sometimes a long time! This process is called "rendering,"—a 5 minute video may take over a half hour, and during this time *the computer should not be used for any other purpose!* It'll need all the processing power and memory it can get! If you captured at full quality, and don't have a lot of transitions or other editing, the rendering process is quite quick.

Of course, you can return to any part of the process at any time—go back and capture more, do more editing, add or delete scenes, etc. But any small change requires re-rendering, so one should be confident you're finished before beginning that process.

## I. To Tape



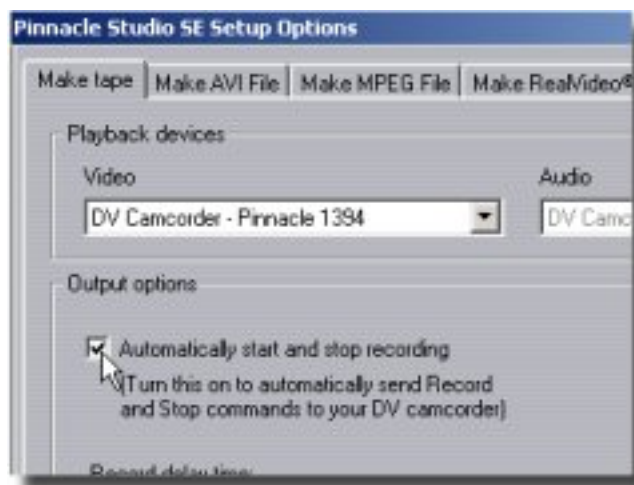


If you're going back to tape (digital

**If you need a VHS copy**, you must first record to your digital camcorder, then use its analog-out patch cables to connect to a VCR. Alternatively, you can create a file, and record the results from a scan converter and patch from the sound card.

camcorder - you cannot go directly to VCR or other analog system from this), you have very little to which to pay attention. Once it is rendered, put a new tape in your camcorder, set it to record, and play your video by clicking on the play button in the view window. While the video plays, it will not appear in the view window, but *will* play in the view window of your camcorder. That's it!

You can even get StudioDV to start and stop the "Record" process on your camcorder if you'd like - if you're confident you won't overwrite a tape you didn't want to lose! Go to "Setup" and under "Make Tape" check the "Automatically start and stop recording" box.



## II. Make File



If you're going to post the video on the Web, include it in a document such as a PowerPoint Presentation, or simply view it on your computer, you'll need to make a file. StudioDV gives three major file formats - MPEG, RealMedia (StudioDV calls it "Stream"), and Windows AVI. For a more complete discussion of these formats, see [Video Formats](#). In general . . .

AVI	Best for files to be embedded in other documents such as PowerPoint presentations
MPEG	Best for posting as simple media files on the Web
"Stream" (RealMedia)	Best for longer videos - these "stream," so the file plays as soon as enough has arrived to start playback, rather than after the entire download is complete.

RealMedia is also useful if you intend to use your video files for multimedia web pages using Synchronized Multimedia Integration Language (SMIL) or RealMedia event-streaming.

## Video Setting

**Which compression codec?** Only AVI files use codecs, and the choice of codecs will determine if your file will play on another computer besides yours. (See [Video Formats](#) for choices.) For the other settings, the chart below should only be a guideline. Length of the video, capture quality, and selected codec all influence the end results, so the only thing you can do is try and test. The settings for RealMedia files are done differently - you choose a target connection speed, and StudioDV works it out for you. Multi-streaming is possible with RealMedia (choosing more than one connection speed), but you must have a RealServer to use this.

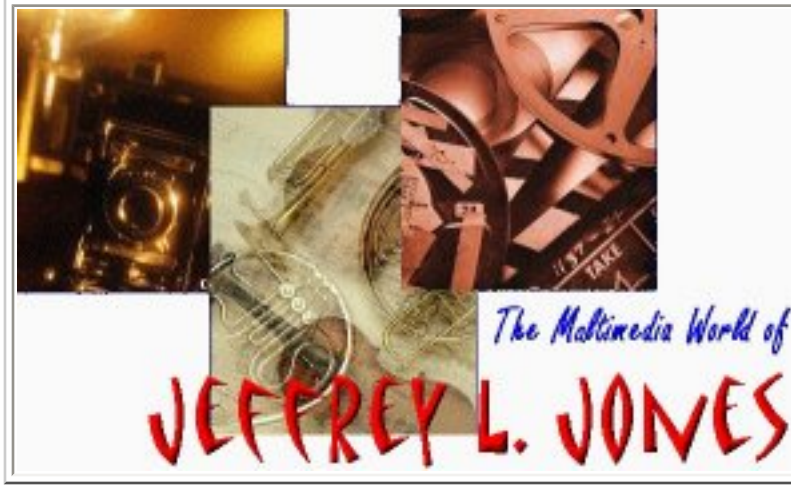
<b>Other Settings</b>	<b>Web delivery</b>	<b>LAN delivery</b>
<b><i>Compression Level</i></b>	Try 75%, and see how large your file is. 50% is probably a bare minimum before things get pretty hazy, but probably necessary for anything over 20 seconds or so.	100 percent if a short video, 75% otherwise - ultimately, you need to test running the video during peak LAN activity to see how it does.
<b><i>Dimensions</i></b>	160 X 120 is fine - the window will be small, but any larger and your file size will be pretty large. If the clip is very short, you can try 320 X 240 and check the resulting file size.	320 X 240 should be fine, unless you really just have to have full screen quality. Remember that Windows Media Player will run at full screen even if it wasn't created that way - with some loss in quality.
<b><i>Frames per second</i></b>	10 is fine.	15, to the eye, is pretty close to a full 29.97 fps, which is the broadcast TV standard.
<b><i>Sound</i></b>	16 bit mono is fine.	32-bit mono is better - don't worry about stereo unless it's a music video - and even then when you're sure it'll be played through something other than computer speakers.

**Workstation delivery:** Basically, file size is the only limiting factor here! However, it is rarely necessary to use more than half-size screen (320X240), since most computer screens are much smaller than TVs.



**General:**

- [File formats and CODECs](#)
- [Classroom Camcorders](#)



# Video:

## Pinnacle Systems StudioDV - Hints and Resources

**DC10+:**

- [Getting Started](#)
- [Capture!](#)
- [Edit!](#)
- [Movie Time!](#)
- [Hints and Resources](#)

**StudioDV:**

- [Getting Started](#)
- [Capture!](#)
- [Edit!](#)
- [Movie Time!](#)
- [Hints and Resources](#)

**Video Applied:**

- [The Web](#)
- [PowerPoint](#)

**Elsewhere on this site:**

- [General Instructional Technology](#)
- [Presentation/Web Imaging](#)
- [Sound](#)
- [Video](#)
- [Home](#)

### Some good rules of thumb when you're shooting video for editing:

**Check sound in the field!** It's easy to assume that that little tiny speaker on your camcorder is the reason you can't hear your playback out in the field. Get a set of earphones, and re-shoot if things don't sound good! It's also extremely advisable to purchase a microphone for use with your camcorder—it reduces ambient noise, makes the sound you want to hear louder, and also adds a level of professionalism students like.

**At a shoot, start the camera rolling at least 5 seconds before what you want to record has started, and stop it 5 seconds after it's over.** This is extremely important! There's nothing worse than trying to edit a video that doesn't have enough video pad for capture and transitions! Video tape is cheap! Shoot more, not less!

**Don't use the overlay, fade, or other controls on your camcorder!** If you do, you're stuck with them forever—better to make those decisions at edit time!

**Keep your backgrounds simple!** This is generally good advice, but especially if you intend to use text overlays. Make backgrounds a solid color if possible, and make sure there's enough room around your subject for overlays to appear if you intend to use them. You'll find that overlays disappear in busy backgrounds, and they will block the view of action if you don't allow for them.

**Estimate how much time you'll need to produce your video . . . then triple it.** Nothing ever goes as planned, and editing usually appears to be simpler than it ends up. Pro studios are good at quick-editing under a deadline—that's why they're pros. Student projects take time!

### Some FAQs and tech hints

**My computer keeps locking up!** Lockups can be caused by a variety of things, and when DV locks up, it does it right—the whole computer is frozen! Remember that capturing and editing video uses massive amounts of data transfer, processor capacity, and memory, so you can't expect it to work like other computers. If there's a silver lining to that - StudioDV is pretty good at auto-saving and recovering from lockups, so when you reboot and reopen, you probably won't





lose much - but don't count on it! Here's some hints:

- Make sure there's adequate hard drive space.
- Don't have a lot of programs sitting on your computer desktop—they use up resident memory and processing speed just sitting there. It's best to have the computer dedicated to video use, and nothing else, if you can get away with it!
- ***Do not multi-task!*** Edit your video, and do nothing else on that machine until you're done editing/rendering your video. Just 'cause Windows says you can doesn't mean StudioDV will like it!
- Make sure a task has been executed before doing another. ***Don't click ahead*** like you do with other programs!

***Lousy sound!*** As you might guess, sound is a tough one. There's several things you can do about sound before editing, fewer as you edit. See above for hints on improving sound in the field. If you're staring at footage whose sound is poor, you can't do much about it other than overlay music and narration through StudioDV. Sometimes sound is too hot on tape, and adjusting it down helps.

***I can't find my captured video!*** Remember about "Naming files?" If you let the computer pick what your files are named, and where they're put, you may not easily find them again! There's nothing worse than 12 sub-folders inside the captured video folder, all filled with files named "Video #," and none having anything to do with the name of the folder! It happens *so* often!

***I want to make tapes to play in my VCR.*** You're stuck with the capability of your camcorder. Since StudioDV is completely in the digital domain, and VHS is analog, something else has to convert for you. Your camcorder will play back on an ordinary TV, so use that to record! Pinnacle (and other manufacturers) make dual DV/Analog systems, but they are much more expensive, and require better hosting computers. Otherwise, you simply have to chose which format you want to work with in advance.

***I want to do animation with StudioDV - can I generate or find an animated GIF and put it into DC10plus?*** Nope, it doesn't support that. You have to "back-door" to get still pictures into the environment by putting them in titles, and that process handles still GIFs, but not animations. Paint Shop Pro and other programs will save animated GIFs as AVI files, which *can* be imported into StudioDV.