

## Basic Steps to Compressing Video

### **Some Background About Compression (*you should read and understand this material*):**

Virtually all video is compressed in some form. A video camera creates data based upon the light that comes through the lens and is focused on the photosensor (the "chip" or CCD). This data is seldom stored in a "pure" or "RAW" form because the size of the files becomes very large, very fast. The larger the file size, the smaller the capacity of the tape, hard disk or other camera storage media.

To compress video in cameras or computers, a CODEC is used. This word is abbreviated from the term "compression-decompression". A CODEC is a file used by the camera or computer to compress or decompress the data that makes up a video signal. There are many different types of CODECs, some common and some proprietary. A serious problem can occur if you have a camera that uses a proprietary CODEC and you don't have a copy of it installed on your computer. The computer might be able to identify the file type but likely cannot open it without the correct codec. The type of CODEC that a camera uses is determined by the manufacturer. On your computer you may have the option to choose the CODEC you want to use to compress the video while exporting from your editing software.

A detailed description is beyond the scope of this explanation but I will attempt to use an analogy that most readers should understand. Think of the CODEC like a printer driver – if you have a printer that uses a common driver, no problem – just hook it up to your computer and you are set. If your printer uses an obscure, obsolete, uncommon or proprietary driver, you may not be able to use the printer.

The same holds true for CODECs. If you have a camera that uses a proprietary CODEC (and some do), and you don't have the CODEC to install (or can't find it on the web) you are out of luck. IN this case, transferring files from a camera to computer and editing them may not be possible.

If you create a playable dvd then CODECS are irrelevant, the video will be encoded in the playable dvd format which can be played commonly on many devices. If you just copy a file to dvd, the codec is important – whoever you give the file to will need to have that CODEC to view and edit the file.

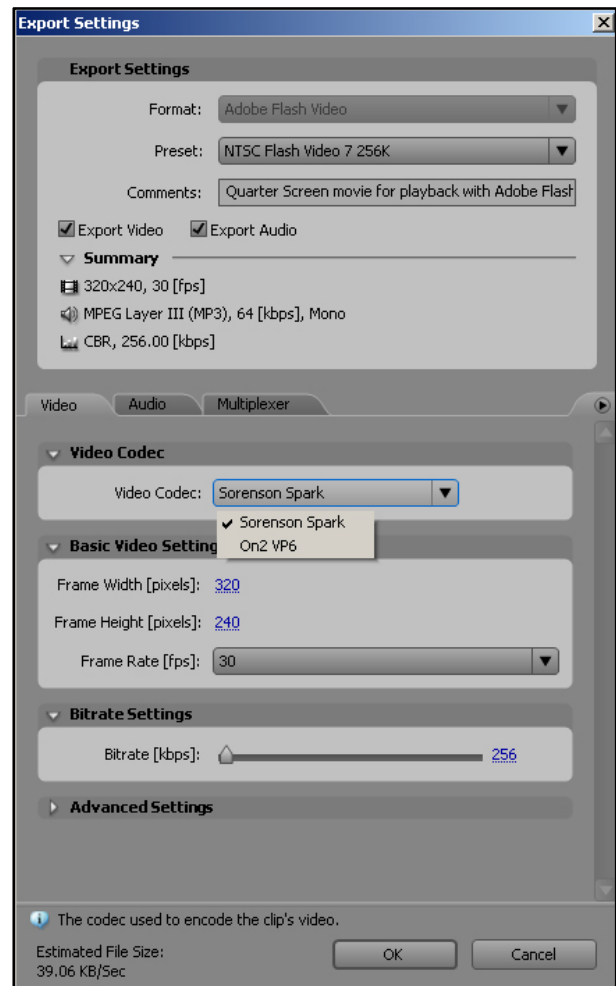
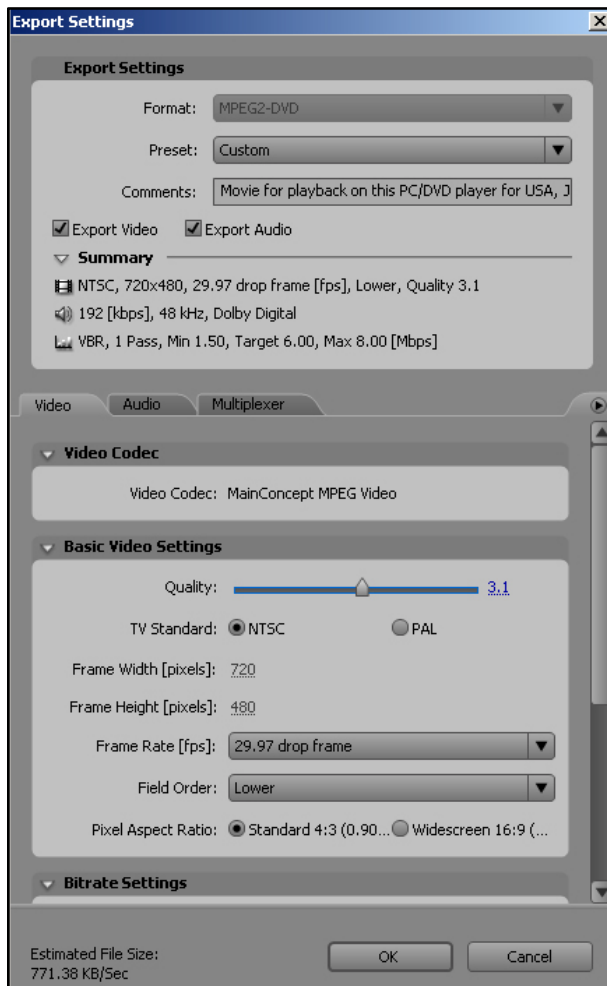
## Compression of Video for SchoolTube

You should be familiar with the system you are using to transfer video from a camera into a computer, and with the editing software (if any) that you will use on the file and then output it as a movie for upload. This is important – time spent reading the manual or reviewing tutorials is worth the investment.

If you are unsure of how to use any of your computer's exporting capabilities, follow these steps to prepare your video for uploading to SchoolTube.

First, make sure your video file is no larger than 1.0 gigabyte. This is a limitation in the SchoolTube system. If it is longer, try cutting it up into separate sections like a series.

When your final timeline is complete, go to File --> Export (this step can vary, depending upon software package you are using). Note: There may be several choices here, either pick one of the file types found below or go to a compression program to continue. The illustrations below show how to see which CODEC is being used to compress you video – it may not be possible to change to another CODEC. This capability varies greatly, depending upon which program you are using to edit. The two illustrations below show the export properties for Adobe Premier Elements. For the MPEG2 export (on left), there is only a single CODEC. For the FLV export (seen below right), 2 are available.



### **Let's start with choosing "QuickTime Movie"**

1. In your video settings, make sure your compressor type is set to "H.264" and your compressor quality on "high"
2. In your video size settings, set your dimensions to "320 x 240".
3. In your sound settings, make sure your audio sample rate is at "44.1 kHz".
4. Exit your settings menu (if necessary), name your file, and compress your video!!\*\*

### **For MAC users:**

1. Export your video like normal from Final Cut Pro
2. Then drop the QuickTime file into the program, Compressor
3. Use the QuickTime 7 settings to export a LAN streaming version
4. If this setting does not take it down far enough, try some of the other QuickTime 7 compression settings.
5. Generally it takes it down about 10% of its original size.

### **Or**

1. Under Final Cut Pro Menu, export using Compressor.

### **If you do not have a QuickTime option, try "Mpeg4"**

1. Change your image size to "320 x 240".
2. Make sure your audio data rate is at "128 kbps" (you don't need to change the video data rate\*).
3. Exit your settings menu (if necessary), name your file, and compress your video!!\*\*

*\*If your video file is over 1.0GB, lower the number in the video data rate box.*

### **You could also try exporting to "WMV"**

- Make your video setting "WMV 9".
- Choose "1Pass VBR" (variable bit rate) for your coding method.
- Set your video quality to "90".
- Make sure your frame size is "320 x 240".
- In your audio settings, set it to "WMA 9 Standard" with a coding method of "1 Pass CBR" (constant bit rate).

- Also set your audio to "128 kbps, 44.1 kHz".
- Exit your settings menu (if necessary), name your file, and compress your video!!\*\*

*\*\*If you are still having trouble getting your video below 1.0 GB there are a couple of options for you to choose from. If you don't mind lowering the quality of your video, try changing your bit rate. The lower the bit rate the smaller the file. With Windows Media instead of bit rate it has a quality slider bar; so the lower the quality the smaller the file.*

*If you would like to keep your video quality high, try splitting your timeline into multiple smaller segments. If you export your video in small sections, you can upload the video in parts like a series (for example, "Frank goes to the park: Part 1", "Frank goes to the park: Part 2", etc.).*