

# Hamilton™

E L E C T R O N I C S

## HDV5200 Series Digital Video Camera Kits

### Teacher's Reference



Prepared by Harold Olejarz

Art and Technology teacher, Wyckoff NJ

[www.HamiltonElectronics.com](http://www.HamiltonElectronics.com)

# Introduction

Welcome and thank you for purchasing the Hamilton Digital Video Exploration Kit. You and your students will find exciting ways to enhance teaching and learning with digital video. This kit will help you incorporate digital video into almost any lesson or project and this manual will help you get started on this wonderful adventure by introducing you to your new camera, software and digital video in general.

In 1895, fifty-six years after the invention of photography, the Frenchman Louis Lumiere, sometimes credited as the inventor of the motion picture camera, used a suitcase-sized machine to film, process and project the first motion pictures. The era of silent films soon followed, marked by D.W. Griffith's *Birth of a Nation* released in 1915 and Charlie Chaplin's *Modern Times*, released in 1936. The 1930's brought the rise of the Hollywood studio system and motion pictures with sound and music became a vital part of our cultural life.

In 1951, the first video tape recorder (VTR) captured live images from TV cameras and saved the images onto magnetic tape. In 1956, the first VTR was sold for \$50,000. Fifteen years later, in 1971, Sony sold the first commercial VCR. At the start of the twenty-first century, camcorders, VCRs and DVD players are ubiquitous and relatively inexpensive. New technologies such as digital video camcorders and video editing software have revolutionized video to the point where teachers and students are now able to produce professional video projects.

This guide offers information on how to work with digital video and digital images along with lesson ideas and Internet resources to help you and your students get the most out of your new camera.

## **Working With Digital Video**

Developments in digital video and video editing software have given teachers and students the ability to produce professional video projects in any classroom. In this section I will review videotaping, editing and presentation and storage tips. This is general information about working with video that will help you guide your students to more successful video projects.

### **Videotaping Tips**

- When taping it is always best to use a tripod and frame your subject. Too often beginning video students do not hold the camera steady. They move the camera up and down and from side to side a tripod will help students shoot better video.
- Use your camera's zoom feature sparingly. Students have a tendency to want to keep zooming in and out so quickly that the resulting video appears very "nervous."
- Encourage students to be aware of lighting. Students should try to keep their light source behind them if taping indoors, make certain that available light is adequate.

- Export your video to a computer daily. Never tape an entire project and then export it to a computer. Reviewing footage in a computer daily provides valuable feedback on the success of your camera work and sound quality, better to discover a taping problem early in a project.
- If you are interviewing someone get the camera as close to your subject as possible for the best sound quality. The camcorder's built in microphone will not work well from a distance, remember, the zoom feature works for video but not for sound.
- Start taping before your subject speaks and let the tape run a few seconds after your subject has finished speaking. This will insure that you don't miss anything.
- Have a spare SD memory card available to insure that you have enough memory available to tape a project. A spare memory card is like an extra roll of film.

## **Editing Tips**

- Once you have imported your footage onto a computer be sure to **SAVE OFTEN**. When you are editing your footage it is also best to save often. This is true no matter what you are doing on a computer but especially true when you are working with large video files.
- Think of video editing as a "cut and place job." First, cut any footage you will not use but be sure not to delete any footage that you may use. Then, place your clips in an order that makes the most sense for

your project. Play it several times and ask others to review your footage before you make any final decisions.

- Be sure to label your clips. This will make it easier to arrange your clips in the proper sequence and/or make changes in the sequence.
- When adding transitions and text make sure that your clip is long enough to contain the text and/or transition. If it is not, the text will spill over into the next clip or the transition will not work properly.
- Transitions between clips take footage from the end of the first clip and the beginning of the second clip. Keep your transition times short. If your transitions are too long your footage will appear choppy.
- If you cannot get a transition to work because your clips are too short, create still clips out of the last frame of the first clip and the first frame of the second clip. Place the transition between the still frames. The still frames will provide the extra footage the transition needs to work without distorting your footage.
- You can always add a voice over or a soundtrack to your video during the editing process.
- If your clips have different sound levels try to adjust them so that the sound does not seem too loud at some points and too soft at others.

## **Presentation and Storage Tips**

- When you have completed editing your video you can render your project into a video file format that is suitable for your audience or

purpose. Then, export the rendered video file as a Web page, multimedia greeting card, or send it to a friend by e-mail. All these and more can be done in VideoStudio's **Share Step**. If you are using a different video editing program check for similar options.

- You can store your video on your computer but that takes up lots of hard drive space. You may want to purchase an external hard drive to store completed videos or videos in progress.
- Digital videos can also be transferred to a VHS tape by connecting your DV camcorder to a VCR.
- If you have the right hardware another option may be to burn your video onto a DVD or video CD.
- Be sure to get proper permission to post videos on the web and/or present video on public access channels if you will be showing video projects outside of the classroom.
- Depending on permission issues you may want students to use first names only in their videos and on their credits.

## **Digital Video Lesson Ideas**

### **Interview Project**

The first project I assign my students is an interview project. This is ideal for students working in groups of three; one student is the host, the second is the guest and the third is the cameraperson. You may have students research a topic or historical figure related to your curriculum and then interview one another on that topic or person. Instruct students to develop answers first when doing their research and once they have their answers they can easily develop the questions. For example, if you are studying the Civil War students could develop an interview with General Grant or Abraham Lincoln. Students may also be required to download images from the web relating to the interview and incorporate the images into the video.

Before students begin taping, instruct them on setting up camera angles for their interview. The interview begins with a shot of both the “guest” and the “host.” This is called a two-shot. In this shot the “host” introduces and welcomes the “guest.” This is followed by alternating “one-shots” of the “host” asking questions and the “guest” responding. The interview ends with a two-shot of the “host” thanking the “guest.”

Video editing software makes it easy to cut and paste video clips. Therefore, I have found it best to have students tape the “host” asking all of the questions first and then tape the “guest” responding to the questions. The two-shots for the introduction and closing can be taped at the start or the end. Taping in this manner helps students understand that video need not be shot in the order that it is presented. It also helps students gain an understanding of the concept of non-linear editing, shooting video out of

order and then assembling the clips in the proper order. Students will have an easier time assembling their clips in the proper order if they name their clips. For example, the question clips are labeled Q1, Q2, Q3, ... and the answer clips are labeled A1, A2, A3, ... Once all of the clips are identified they can then be placed in the proper sequence. When students try to tape an interview in real time with one camera the resulting video is marred by the camera moving between the “host” and “guest.”

## **Digital Storytelling**

Students may use images, video and sounds to tell a story about a member of their family or a person they know who lived through an interesting historical moment. In language arts students can develop writing and editing skills in developing a narrative for their video. For more information see: [www.digitalstories.org/](http://www.digitalstories.org/)

## **Instructional Videos**

You may have your students create instructional videos on anything from how to cook certain dishes to how to use a microscope or how to solve math equations. The instructional format is an exciting way to use video to explain how something is done in any subject area from science to language arts.

## **Student Documentaries**



Students can also take a documentary approach to digital video projects. They may research a historical period or scientific invention and use that information as the basis for their documentary video project. This can easily be done by downloading still images from the Internet or scanning images from books. The still images may be imported into your video editing programs. Voice-overs and additional video footage may be added to create a documentary in the style of Ken Burns.

### **Student Videos from Poetry**

When I began using poetry in my digital video classes I realized that poems provide a wonderful structure for digital video projects. The poem, after all, is a script for a performance.

The poetry project begins when groups of two to four students are asked to find a poem that they would like to dramatize. Once the poem has been approved the group must find a way to dramatize each line of the poem. Students may also use still images downloaded from the Internet to illustrate lines of their poem or better yet create images of their own in traditional or digital media. Once the students have completed taping their dramatizations and finding suitable images they construct their video. The students must add the text of each line of the poem to their video clip or still image. If they did not speak the line of the poem when taping, they may record the line as a voice over. The resulting project is a true multimedia interpretation of a poem that includes images, sounds and text.

## **Student Commercials**

Digital video can also be used for the ultimate commercial art project, a TV commercial. Students can take on the challenge of using 30 or 60 seconds to communicate a message and sell a product in an entertaining way.

The TV commercial project may be started by a class discussion of favorite commercials and why they are successful. Teachers can easily tape some commercials and have students analyze how the commercials sell the product and use the media effectively. Once a set of criteria for a good commercial has been established by the class, groups of students can then decide on the product or service their commercial will promote. Then they should gather or create props, write a script and tape and edit the commercial. Limiting students to 30 or 60 seconds helps students learn to be clear and concise. This project may also be modified so that students are asked to create a Public Service Announcement, PSA, or a commercial for a school club or activity.

## **Evaluating Digital Video Projects**

When the projects are completed they should be presented to the class. Occasionally, students are so impressed with their peer's projects that they applaud at the end of the video. Following the presentation have a class discussion about the video. I have students begin by discussing their appreciation's, things they liked about the video. We also discuss the content

of the video, what the students learned from the video. When the class is done with their appreciation's I then allow students to make suggestions for improvement. Students often focus on technical aspects and point out problems with sound, lighting and/or composition. A class discussion about video projects helps reinforce learning and gives students insights into what makes a quality video.

## **Working With Digital Images**

**In addition, to video your camera is also a high resolution digital still camera. This section provides a brief overview of how to use digital imaging in your curriculum.**

One picture may be worth a thousand words but digital images may be used in thousands of ways and seen by thousands of people. Digital images offer students and teachers opportunities to be creative with photographs. Digital images can easily be used to enhance students' learning and teachers teaching. Listed below are some of the things you can do with the digital photographs you and your students take with the Hamilton Digital Camera.

- Unlimited Copies - digital image files may be duplicated and/or printed many times
- Unlimited use of the same image - students may use the same digital image in different documents

- Scaled to print in different sizes - high resolution digital images may be printed in large or small sizes
- Shared via e-mail - digital images may be sent to anyone with an e-mail account
- Shared via World Wide Web - web sites can display digital images
- Presentations - images can be used in PowerPoint or other computer presentations
- Digital video - images can be imported into digital video projects and transferred to videotape or DVDs
- Create database - images can be imported into a database, for example, a database on types of plants
- Editing for emphasis- copies of digital images can be drawn on or edited without ruining the original image
- Image storage - digital images may be stored on a computer, CD, disk or web site
- Slide shows - computers can run slide shows of digital images
- Portfolios - image portfolios of student projects can be stored, presented or posted on the web

## **Saving Digital Images**

Back in the days of film cameras, we all knew that the negatives that came with our prints should be preserved and stored if we ever wanted to make more prints. When your pictures are digital, you don't have a negative, but you do have the original picture file. You and your students should treat the original picture file as the negative and save your original image files that you download from your camera in folders in an organized way that best suits you and your students' needs. You may also choose to have folders with the names of the events or places you have photographed. Whatever you decide be sure to save and backup, make copies of, your picture files. Remember, your picture files are more important than your prints because you can make many more prints from one picture file.

The best way to preserve your digital images is to burn them on a CD. CDs are inexpensive and may store up to 700 MBs of data. That means that you can store hundreds of pictures on one CD. Burning picture files on CDs is also a great way to share pictures with others. You can burn extra CDs to give to colleagues, students and/or friends.

## **Presenting Digital Images**

Making prints and CDs are not the only ways to share your digital images. Digital photographs may be included in presentations using programs like PowerPoint or Keynote. Digital images may also be included in multimedia projects created by a variety of programs like MovieWorks, eZedia, and HyperStudio. Digital photographs may be presented as slide shows on computers or TVs.

Posting pictures on the Internet is a popular way to present photos to an unlimited audience. If you are using a program like Photoshop Elements there is a Create Web Photo Gallery option in the File Menu. There are also many sites that offer a free and easy way to post your pictures online. Do remember, that if you post pictures of students, you need to get permission first.

## **Digital Imaging Lesson Ideas**

There are thousands of ways to use digital photography to enhance your curriculum. You probably purchased the Hamilton Digital Photography Exploration Kit because you had some of your own ideas on how to use a digital camera with your students. This section lists some starting points for incorporating digital imaging into your lessons. Internet sites that have examples of lessons using digital imaging are also included.

### **General Ideas for All Subjects**

- Digital Photography is a great way to document any classroom activity or field trip. Encourage students to see themselves as reporters or documentary photographers. The students' assignment could be to create a photographic essay that documents a classroom activity or class field trip.
- Add captions to photos and print them to create posters.
- Use photos in multimedia presentations.

- Have students make flash cards by taking photographs demonstrating new vocabulary words or concepts. Print extra copies of the flash cards to develop a valuable classroom resource.
- Create a visual seating chart that not only has the names of your students but their pictures too.
- Students may use photographs to document their projects and create visual portfolios of their work.
- Students may use photographs to illustrate writing assignments.
- Students may use digital photographs in newspapers or magazines they have created for units taught in your class.
- Students may create a visual database of photographic images.
- Students may use digital imaging software to draw and paint on a picture they have taken to illustrate something taught in class.
- Combining images downloaded from the Internet with photographs students have taken is a great way to expand the use of digital images in your curriculum. An example of this would be if a class is studying Spain, students may download a picture of a historic site in Spain and then, using imaging software, take a digital picture of another student and create an image that makes it look like the student is visiting the historic site.
- Digital Scavenger Hunt - students find things and photograph them.

## **Lesson Plans That Use Digital Images**

The web sites listed below offer a wide range of lesson plans and ideas that will help you get the most out of your Hamilton Digital Camera.

**Pics4Learning Lesson Index** contains a listing of lessons in Language Arts, Science, Math and Social Studies. <http://www.pics4learning.com/lessonplans.php>

**North Central Regional Technology in Education Consortium Lesson Index**

provides some lesson plans created by teachers that demonstrate some ways in which pictures and other graphic resources might be useful in a classroom.

<http://www.ncrtec.org/tl/camp/lessons.htm>

**Kodak Lesson Plans** - contains a list of lessons organized by subject and grade level. <http://www.kodak.com/US/en/digital/dlc/plus/chapter5/lessonPlans.shtml>

**Smile! Digital Cameras Can Make Your Day** - an article on using digital cameras in the classroom. [http://www.educationworld.com/a\\_tech/tech147.shtml](http://www.educationworld.com/a_tech/tech147.shtml)

**Teacher To Teacher** - contains lesson ideas that use digital cameras submitted by teachers from around the world.

<http://www.brunswick.k12.me.us/lon/lonlinks/digicam/teacher/home.html>

**75 Ways to Use Your Digital Camera** - this site lists ideas to get students involved in taking pictures as an activity to reinforce various skills.

<http://www.semo.net/suburb/mgilmer/digcam/index.htm>

**Using the Digital Camera in the Primary Classroom** - lesson ideas for elementary students. [http://www.hardin.k12.ky.us/res\\_techn/TEC/digitalcamera/primary.htm](http://www.hardin.k12.ky.us/res_techn/TEC/digitalcamera/primary.htm)



**Photo Collages - Photomosaics** - digital imaging art lessons.

<http://home.wi.rr.com/clipartngraphics/ArtEdTech/ArtEd3.html>

**Digital Imaging - Mr. Olejarz** - digital imaging art lessons.

<http://www.wyckoffschools.org/eisenhower/teachers/olejarz/digitalimaging/index.html>

**Emerald Ridge High School Digital Imaging Course** - digital imaging art lessons.

<http://digimg.erhs.org/index.html>

## Internet Resources

### Digital Video Resources on the Internet

- **The Internet Archive** - <http://www.archive.org/details/movies>

A non-profit that was founded to build an 'Internet library,' with the purpose of offering permanent access for researchers, historians, and scholars to historical collections that exist in digital format. The Internet Archive includes texts, audio, moving images, and software as well as archived web pages.

- **Digital Stories** - <http://www.digitalstories.org/>

This website is designed to showcase digital stories told by students and their teachers. Students and teachers are invited to sample the digital stories presented on this website and to submit their own digital stories for inclusion.

- **Digital Video in Education** - <http://edtech.guhds.net/video.html>

This site explains how to develop and plan video projects in the classroom

- **Schoolhouse Video - <http://www.schoolhousevideo.org/>**

Learn about a collaborative project between a middle school science teacher and a TV station.

- **Center for Digital Storytelling - <http://www.storycenter.org/>**

The Center for Digital Storytelling is a California-based non-profit arts organization rooted in the art of personal storytelling. They assist young people and adults in using the tools of digital media to craft, record, share, and value the stories of individuals and communities, in ways that improve all our lives.

- **Digital Video for Problem Solving/Decision Making -**

**<http://techintegration.editme.com/digitalvideo>**

Topics reviewed on this site include:What is digital video? How can I use Digital Video in my classroom as a problem solving tools? How can I use Digital Video in my classroom as a decision making tool? Why should I use it in my classroom?

## **Finding Images on the Internet**

For some lessons you may want your students to use pictures of objects or places that they may not be able to photograph in addition to photographs they have taken. This section includes information on how to find images on the Internet.

## Image Search Engines

Anyone who has used the Internet has probably used a search engine like Google or Yahoo. Most search engines have an image search feature that lets you search the Internet for pictures. A student may go to an image search engine, look for a picture of the Great Wall of China, download the picture, and use imaging software like Photo Express or Photoshop Elements to paste an image of a fellow student into the picture of the Great Wall of China. The Google Advanced Image Search site may be found by going to **www.google.com** and clicking on Images and then selecting Advanced Image Search. The URL of the page is:

**http://www.google.com/advanced\_image\_search?hl=en**. This page, pictured below, lets the user refine their search to get the right image. If you are using downloaded images for print be sure to select medium or large in the file size pull down menu. Notice that the bottom of the Advanced Image Search window has a SafeSearch feature. It is wise to select the “Use strict filtering” option to ensure that the images are appropriate for school projects.



|              |   |  |  |
|--------------|---|--|--|
| Find results | related to all of the words<br>related to the exact phrase<br>related to any of the words<br>not related to the words                 | <input type="text"/><br><input type="text"/><br><input type="text"/><br><input type="text"/> | <input type="button" value="Google Search"/> |
| Size         | Return images that are  | <input type="text" value="any size"/>  |  |
| Filetypes    | Return only image files formatted as  | <input type="text" value="any filetype"/>  |  |
| Coloration   | Return only images in   | <input type="text" value="any colors"/>  |  |
| Domain       | Return images from the site or domain   | <input type="text"/>   |  |
| SafeSearch   | <input type="radio"/> No filtering <input type="radio"/> Use moderate filtering <input checked="" type="radio"/> Use strict filtering |  |  |

©2004 Google

## **Web Sites Offering Free Images**

There are also web sites that specialize in offering free images for use in educational projects. The images on these sites are a valuable resource that can be used along with the digital photographs your students take.

**Pics4Learning** - is set up for use by educators and students. This site also has lesson plans. <http://www.pics4learning.com/>

**Kid's Image Search Tools** lists special image databases.

<http://www.kidsclick.org/psearch.html>

**Freefoto** bills itself as the “largest collection of free photographs for private non-commercial use on the Internet.” <http://www.freefoto.com>

**picsearch** bills itself as “a search engine for pictures and images that allows children to surf in safety as all offensive material is filtered out by our advanced filtering systems.” <http://www.picsearch.com/>

## **Clip Art**

There are also web sites that offer free clip art. Clip art may be pasted into photographs and/or used in presentations.

**Teacher Files** - [http://www.teacherfiles.com/clip\\_art.htm](http://www.teacherfiles.com/clip_art.htm)

**Discovery Channel Clip Art** - <http://school.discovery.com/clipart/index.html>

**Awesome Clip Art for Kids** - <http://www.awesomeclipartforkids.com/>

**The Graphic Site** - <http://home.wi.rr.com/clipartngraphics/Site/Site.html>

**Kids Domain Clip Art** - <http://www.kidsdomain.com/clip/>