The Villages Computer Club Friday, June 1st, 1 P.M. La Hacienda
This week's program will feature a presentation by Bob Petrilak on **Picasa**.
Picasa is an image organizer and image viewer for organizing and editing
digital photos, plus an integrated photo-sharing website.

Following the presentation will be refreshments, 50/50, door prizes and a
problem solving session.

If you have a computer problem you can't resolve, fill out the problem report
form found at http://thevillagescomputerclub.com/meetings.php and bring it to
the meeting.

Sign up to be on the VCC email list at the VCC home page (below)

For more information on the VCC please reference the clubs web site at:
http://thevillagescomputerclub.com/

Guests are always welcome.
For information, email Paul Rabenold at TVCC.Pres@gmail.com

**Don't forget !! iPad Meeting on June 5th 1:30 pm at Colony Cottage
Recreation Center. For more information about iPad and Android
meetings sign up on the email list at the web site at
http://villagesipadandroid.weebly.com/**
****

0peration Shoebox
-- selling tickets to the Bonefish Grill, (The Villages) Elegant Culinary Dinner for 8. --each ticket
is $10.00 or 3 for $20. This will be a tasteful experience, starting with award-winning martinis,
signature appetizers, oak grilled specialties, spectacular wines and desserts (gratuity included).
The estimated value is $800 for this great dinner. Be prepared to be wined and dined for 2-3
hours. The winning ticket will be drawn in late September. Call Barb for tickets - 259-3802
****
WARNING! WARNING! WARNING!

**If you receive an email of the following pattern, it is SCAM, the links in the message will
take you to a site for advertisements or one that attempts to get you to enter personal
information for identity theft.**

DO NOT respond—delete it immediately! Do not click any links in the email, and do not
"unsubscribe" or acknowledge the email in any way.

From: Online Transfers from Bank of America trong>Sent: Wednesday, May 16, 2012 2:57 PM
To: UVa LoginID
Subject: Your Same Day wire transfer was successfully sent

We have successfully sent the following transfer:
****

Item #: 086893053
Amount: $9198.00
To: Caprabo
Fee: 45.00
Send on Date: 05/16/2012
Service: International Wire Transfer
****
You can always check your transfer status on the Review Transfer screen at www bankofamerica com.
Wire Details Report: (Microsoft Word Document)

Sincerely,
Member Service
bankofamerica com

****
****

Recording Cassette Tapes – Synopsis - Microsoft Media Education

Check Microsoft website for details

http://www.microsoft.com/windows/windowsmedia/knowledgecenter

Record Music from a Cassette Tape to Your Computer

This synopsis of the Windows Media workshop explains how to connect a cassette tape deck to your computer, record audio from a cassette onto your computer, and then play the recorded music in Windows Media Player.

What You'll Need!
Software:

Plus! Analog Recorder in the Plus! SuperPack

Windows Media Player 10

Hardware:

Stereo RCA cable (2 RCA connectors and a mini-jack connector)

Cassette tape deck

Sound card (with Line In jack)

Step 1: Connecting a Tape Deck to Your Computer

The first step in recording music from a cassette tape is to connect a cassette tape deck to your computer.

To connect a tape deck to your computer

Plug one end of the stereo RCA cable with the red-and-white, male RCA connectors into the red-and-white, female RCA jacks that are labeled **Line (Out)** on the cassette tape deck.

Depending on whether you are using a Y-cable or stereo RCA cable, do one of the following:

If you are using a Y-cable that already has a mini-jack stereo connector on the other end of the cable, go to the next step.

If you are using a stereo RCA cable that has red-and-white, male RCA connectors on both ends of the cable, plug the end not already connected to the female RCA jacks on the cassette tape deck into the female red-and-white RCA jacks of a mini-jack stereo adapter.

Plug the mini-jack stereo adapter into the female **Line In** jack on the sound card of your computer.

Step 2: Recording Music from a Cassette Tape Deck in Plus! Analog Recorder

After you connect your cassette tape deck to your computer, you are ready to start recording music to your computer by using Plus! Analog Recorder.

Detect audio levels

Start Plus! Analog Recorder, which is installed with Plus! Digital Media Edition or Plus! Super Pack.

On the **Welcome to Plus! Analog Recorder** page, click **Next**.

On the **Adjust your recording level** page, in the **Sound device** list, click the device you want to use. (The sound device is usually the name of the sound card that is installed on your computer.)

In the **Input channel** list, choose **Line In**. This is the jack that the mini-jack connector is plugged into on the sound card that is installed on your computer.

To begin detecting audio levels, press the **Play** button on your cassette tape deck, and then click **Start** in Plus! Analog Recorder. Detecting audio levels helps to make sure that the recording volume is set correctly.

After an acceptable audio level has been detected, click **Next**.

If necessary, on the tape deck, press the **Rewind** button to rewind the tape to the beginning.

To record the music from the cassette tape

On the **Record your music** page, click **Record**, and then press the **Play** button on your tape deck.

For tracks that you don't want to record, click **Pause** to pause the recording, and then click **Record** to continue recording when the tape deck begins to play the next desired track.

Let the music play to the end of the tape, and then click **Stop** in Plus! Analog Recorder.

On your cassette deck, press the **Stop** button to stop playing the tape.

Eject the tape from the cassette deck, and then flip the tape over.

Repeat steps 1-3 to record the music on the other side of the tape.

After recording the second side of the tape, in Plus! Analog Recorder, click **Next**.

To enter track information

On the **Review and name your tracks** page, click the first recorded track named Track 1.

To preview the recorded track, click the **Preview** button.

Do the following:

In the **Name** box, type the name of the track.

In the **Artist** box, type the name of the artist.

In the **Album** box, type the album name.

In the **Genre** box, type the appropriate genre.

For the other recorded tracks, type the name for each individual track.

(The information in the Artist, Album, and Genre boxes stays the same.)

If necessary, do one or more of the following, and then click **Next**.

If you have a short recorded track that does not contain music, click **Delete** to delete the empty track (that usually is just recorded noise).

If the number of recorded tracks differs from the number of tracks listed on the tape, two tracks may have been recorded as one long track (possibly because there was only a short pause between tracks on the cassette tape). To correct this, click the **Preview** button, play the music until the end of the first track, and then click the **Split** button to split the track into two tracks.

To clean the recorded tracks

Select the **Reduce pops** and **Reduce hiss** check boxes.

This lets you choose special filters to improve the sound of the recorded tracks by removing pops and hisses that sometimes occur when recording from a cassette tape deck. The filters are applied for all of the recorded tracks.

Click **Preview** to play the recorded track with the cleaning filters applied. Click **Next**.

To select the save settings and save tracks as Windows Media Audio (WMA) files

In the **Save music tracks to this location** area, the location where the recorded music will be saved is listed. By default, the recorded music is saved in the My Music folder.

To change the save location, click **Change**, choose the appropriate folder location, and then click **OK**.

In the **Save settings** area, select or clear the **Protect content (use DRM)** check box. If you select this check box, you will not be able to share your tracks with friends.

On the **Save music at this quality** setting, drag the slider to the appropriate location.

To save the music at a high-quality setting, drag the slider towards the right. However, note that as the quality setting increases, so does the file size of the saved WMA files.

To add the recorded music to a new or existing Windows Media Player playlist, click the **Add tracks to Windows Media Player playlist** drop-down box, and then click an existing playlist or click **New** to add the recorded tracks to a new playlist.

To save the tracks, click **Next**.

The progress of saving the tracks as WMA files appears on the **Saving your tracks** page.

To close Plus! Analog Recorder, click **Finish**.

Step 3: Playing the Recorded Music in Windows Media Player 10

After you have recorded the music from a cassette tape to your computer, you can then play the music on your computer.

To play the recorded music

Start Windows Media Player 10.

Click **Library**, and then do one of the following:

To play the recorded music by selecting the album title, expand **All Music**, click **Album**, and then double-click the album name for the cassette tape you recorded.

If you added the saved WMA files to a new playlist, expand **My Playlists**, and then double-click the playlist that includes the recorded tracks.

You can now "burn" the playlist or individual tracks to a CD using your CD recorder or you can use the copy to CD from Windows XP.

Microsoft Plus also comes with an audio converter to save your recordings in MP3 format and a CD Label Maker

Featured Websites

Recording Audio (Tapes & Records)

http://www.Microsoft.com
> **Plus – Analog Recorder**
> **Mediaplayer**
> **Recording Audio**

Acoustica.com – Spin it Again
Foxshareware.com
Audacity.com
Freecorder.com
Audio-recorders.net
Pdmarq.com

Deepcom.com

<u>Recording Video</u>

Microsoft.com WinXP "Moviemaker"

ADStech.com

Pinnaclesys.com Dazzle Pinnacle

****
****

Transferring audio from cassettes to cd using Roxio Easy CD Creator:

1.Connect the Line Out or Aux RCA output to the Line-In port on your computer's sound card.
2. Using ROXIO Easy CD Creator. Click SOUNDSTREAM.
3. Click oblong blue button to bring up Spin Doctor.
4. Click Spin Doctor, move volume sliders so green is about half way.
5. Choose Sound Cleaning (advance AC97) if tape is professionally recorded, if a copy use the RECORD button.
6. Click File on next screen.
7. Select File Type – MP3.
8. Select Folder – Cassettes
9. Enter Name of Cassette
10 Click RECORD.

Note: You can play these cds only on an MP3 player.

To Burn to CD-R
1. Using Roxio Easy CD Creator, Select MUSIC to play on any stereo. Select Make a Data CD if making for an MP3 player. Select Data CD project
2. SELECT My Documents & Cassettes folder, select files.
3. For cd-rw use 4X speed
4. MP3 Gain, add files. Open all or one file and run tract analysis. Default is 89 sec/sec. Click Tract Gain and wait for gain to change to 0 and near 89.

See Google for MP3 Gain

****

CD and DVD History

Note: Re Music CDs. Generally speaking to get something to play away from your computer, like in your car, you have to **close the cd** after burning. If it's an eighty minute cdr and you only use thirty minutes you can't add to it after it has been closed. But, to play it in a stereo or your car, you will have to Close the CD.

CD-DA (Compact Disk-digital audio), the original compact disc for music, was defined by Philips and Sony, in 1982. The CD-DA allows a music playing time of 74 minutes 30 seconds.

CD-ROM (Compact Disk, read-only-memory) is an adaptation of the [CD](CD) that is designed to store computer data in the form of text, video, and graphics, as well as stereo sound. . Format of the CD-ROM is the same as for audio CDs: a standard CD is 120 mm (4.75 inches) in diameter and 1.2 mm (0.05 inches) thick and is composed of a polycarbonate plastic substrate (underlayer - this is the main body of the disk), one or more thin reflective metal (usually aluminum) layers, and a lacquer coating.

High Sierra Format (HSF)

The specifications were so general that there was some fear in the industry that multiple incompatible and proprietary formats would be created. In order to prevent such an occurrence, representatives from industry leaders met at the High Sierra Hotel in Lake Tahoe to collaborate on a common standard. Nicknamed the *High Sierra Format*, this version was later modified to become ISO 9660. Today, CD-ROMs are standardized and will work in any standard CD-ROM drive. CD-ROM drives can also read audio compact disks for music, although CD players cannot read CD-ROM disks.

CD-ROM Data Storage

Although the disc media and the drives of the CD and CD-ROM are, in principle, the same, there is a difference in the way data storage is organized. Two new sectors were defined, Mode 1 for storing computer data and Mode 2 for compressed audio or video/graphic data.

CD-ROM Mode 1

CD-ROM Mode 1 is the mode used for CD-ROMs that carry data and applications only. In order to access the thousands of data files that may be present on this type of CD, precise addressing is necessary. Data is laid out in nearly the same way as it is on audio disks: For mode 1 CD-ROM data storage, the sectors are further broken down, and 2,048 used for the expected data, while the other 304 bytes are devoted to extra error detection and correction code, because CD-ROMs are not as fault tolerant as audio CDs. There are 75 sectors per second on the disk, which yields a disc capacity of 681,984,000 bytes (650MB) and a single speed transfer rate of 150 KBps, with higher rates for faster CD-ROM drives. Drive speed is expressed as multiples of the single speed transfer rate, as 2X, 4X, 6X, and so on.

CD-ROM Mode 2

CD-ROM Mode 2 is used for compressed audio/video information and uses only two layers of error detection and correction.. Therefore, all 2,336 bytes of data behind the sync and header bytes are for user data. Mode 1 and Mode 2 are the same size, the amount of data that can be stored varies considerably because of the use of sync and header bytes, error correction and detection. The Mode 2 format offers a flexible method for storing graphics and video. It allows different kinds of data to be mixed together. Mode 2 can be read by normal CD-ROM drives, in conjunction with the appropriate drivers.

Data Encoding and Reading

The CD-ROM, like other CD adaptations, has data encoded in a spiral track beginning at the center and ending at the outermost edge of the disk. The spiral track holds approximately 650 MB of data. That's about 5.5 billion bits. The distance between two rows of pits, measured from the center of one track to the center of the next track is referred to as track pitch. The track pitch can range from 1.5 to 1.7 microns, but in most cases is 1.6 microns.

Constant Linear Velocity (CLV)

Constant Linear Velocity is the principle by which data is read from a CD-ROM. This principal states that the read head must interact with the data track at a constant rate, whether it is accessing data from the inner or outermost portions of the disk. This is affected by varying the rotation speed of the disk, from 500 rpm at the center, to 200 rpm at the outside. In a music CD, data is read sequentially, so rotation speed is not an issue. The CD-ROM, on the other hand, must read in random patterns, which necessitates constantly shifting rotation speeds. Pauses in the read function are audible, and some of the faster drives can be quite noisy because of it.

CD-R

CD-R (for *Compact Disk, recordable*) is a type of *write once,* CD format that allows one-time recording on a disk. The CD-R (as well as the CD-RW) format was introduced by Philips and Sony in 1988. Prior to this, CDs had been read-only audio (CD-Digital Audio), to be played in CD players, and multimedia (CD-ROM), to be played in computers' CD-ROM drives, any user with a CD recorder drive could create their own CDs from their desktop computers.

CD-Rs are composed of a polycarbonate plastic substrate, a thin reflective metal coating, and a protective outer coating. However, in a CD-R, a layer of organic polymer dye between the polycarbonate and metal layers serves as the recording medium. The composition of the dye is permanently transformed by exposure to a specific frequency of light. Some CD-Rs have an additional protective layer to make them less vulnerable to damage from scratches, since the data - unlike that on a regular CD - is closer to the label side of the disk. A pregrooved spiral track helps to guide the laser for recording data, which is encoded from the inside to the outside of the disc in a single continuous spiral. The laser creates marks in the dye layer that mimic the reflective properties of the *pits* and *lands* (lower and higher areas) of the traditional CD. The distinct differences in the way the areas reflect light register as binary data that is then unencoded for playback.

CD-R disks usually hold the standard 74 minutes (650MB) of data, although some can hold up to 80 minutes (700MB). With packet writing software and a compatible CD-R or CD-RW drive, it is possible to save data to a CD-R in the same way as one can save it to a floppy disk, although - since each part of the disc can only be written once - it is not possible to delete files and then reuse the space. The rewriteable CDs, CD-RWs, use an alloy layer (instead of the dye layer) which can be transformed to and from a crystalline state repeatedly.

CD-RW

CD-RW (for *Compact Disk, rewriteable*) is a CD format that allows repeated recording on a disk. The CD-RW format was introduced by Hewlett-Packard, Mitsubishi, Philips, Ricoh, and Sony, in a 1997. CD-RW drives can write both CD-R and CD-RW disks and can read any type of CD.

CD-RW disks usually hold 74 minutes (650MB) of data, although some can hold up to 80 minutes (700MB) and, according to some reports, can be rewritten as many as 1000 times. With packet writing software and a compatible CD-RW drive, it is possible to save data to a CD-RW in the same way as one can save it to a floppy disk. For a CD to record correctly, it is crucial for a steady data stream to be created. Typically, the drives have a 2MB cache, used as a buffer. If the buffer runs out of data during the writing process, the CD produced will be unusable.

DVD (Digital Versatile Disk)

DVD is a relatively new optical disc technology that uses denser recording techniques in addition to layering and two-sided manufacturing to achieve very large disc capacities. DVDs can hold video, audio and computer data. DVD drives are also able to read CD-ROMs. The original purpose of DVD was to hold video data in particular - DVD once was said to stand for *Digital Video Disk*. However, as the number of DVD applications grew, the variety of data that can be stored on DVD was reflected in its present name, Digital Versatile disc (although some claim that it should be referred to only by the three letters, DVD).

Also a 4.7 inch diameter (120 mm) by .05 inch (1.2mm) thick disk, the DVD stores data on a spiral track like the CD. The wave length of the laser beam used to read the DVD disc is shorter than that used for standard CDs. The DVD disc is created with shallower and smaller indentions, thereby enabling greater storage capacity.

In addition, there are more tracks per disc on DVDs, because they are placed closer together than on CDs. The track pitch has been reduced to 0.74 microns. This is less than half that of CDs, which is 1.6 microns. Data pits are considerably smaller, which allows a greater number per track than on CDs. The average DVD disc holds 4 times the number of data pits that can be held by a CD. The average capacity of a single-sided, single-layered disc is 4.7 gigabytes. DVD has also increased the efficiency of the data structure on the disk. In the 1970s, when CDs were first developed, considerable error correction was necessary to ensure that the disc would play correctly. More bits were being used for error detection and correction, which limited the disk's capacity to carry user data. DVD's more efficient error correction code (ECC) allows increased capacity for user data.

The larger number of data pits on a DVD is accomplished by shortening the wavelength of the laser used to create the pits. The wavelength was reduced from 780nm (nanometers), infrared light, for the CD, to 635nm to 650nm, red light, for the DVD. *Synchronization* ensures that both audio and video portions of the DVD are presented to the user simultaneously (at the same time), an important aspect of digital movie playback architecture.

Double-Layered DVD Disks

DVD disks can also be constructed with two layers. On a double-layered disk, each data layer is half as thick as that used in the CD-ROM. Data can, therefore, be written in two layers. The outer layer is semi transparent to allow reading of the underlying silver layer. The reading laser operates at two different intensities, the stronger one reads the inner, silver layer. This increases the storage capacity to 8.5 Gb of data and eliminates the necessity of removing and flipping the disk.

An additional feature that improves efficiency is the dual-directional readability of the second data layer. Unlike standard-density CD-ROMs, which can only be read from the innermost part of the spiral track to the outermost part, the second layer of the double-layered DVD can be written to and read from either direction. This results in faster transitions by the reading laser. It can actually take less time for the reading laser to refocus to retrieve data from a different layer on a DVD than it does for the laser to relocate and retrieve data from a different part of the same layer on a CD-ROM.

An extension of the double-layered disc is the double-sided DVD disk. To enable the refocusing of the read laser, manufacturers have constructed DVD disks with a thinner plastic substrate than that used on a CD-ROM disk. This reduces the distance that the laser must travel to reach the data pits. The resulting disks were only 0.6mm thick, too thin to remain flat and withstand handling. Two disks were then bonded back-to-back resulting in a thickness of 1.2mm, a manageable thickness. This virtually doubled the disc capacity.

DVD Versions and Storage Capacity - Unlike standard CDs, DVD disks have varying storage capacities, expressed as a numeral

DVD VERSION	Description & Storage Capacity
DVD-5	Single-sided, single-layered disc with 4.7Gb capacity
DVD-9	**Single-sided, double-layered with 8.5Gb capacity**
DVD-10	**Double-sided, single-layered disc with 9.4Gb capacity**
DVD-18	**Double-sided, double-layered disc with 17Gb capacity**

DVD Regional Codes

In an effort to control the home release of movies in different countries, motion picture studios have devised a method to prevent playback of certain disks in certain geographical regions. Since theatre releases are not simultaneous, and because studios sell distribution rights to foreign distributors and would like to guarantee exclusive markets, pressure was brought to bear on the writers of the DVD standard. The standard now includes codes that can be used in playback devices to ensure that only disks purchased in the same geographical areas as the players will function properly.

Regional codes are entirely optional for disc manufacturers, however. disks without codes will play on any player regardless of its origin. One byte of information holding the regional code can be checked by the player. There is no encryption involved, but regional codes are a permanent part of the disc with no unlocking mechanism included. Although manufacturers originally planned to code only new releases, most DVD disks today are geographically coded.

The DVD Forum

1. The DVD Forum is an international organization made up of companies using or manufacturing DVD - related products. The Forum, which was originally called the DVD Consortium, was created in 1995 when ten companies (Hitachi, Matsushita, Mitsubishi, Philips, Pioneer, Sony, Thomson Multimedia, Time Warner, Toshiba Corporation, and Victor) joined for the common purpose of promoting DVD worldwide, establishing single formats of each DVD application for the marketplace, and addressing the issues threatening DVD acceptance, such as standardization and device compatibility issues. From ten founding members, the DVD Forum membership has grown to include some 230 companies worldwide.

Digital Versatile disc - Read Only Memory (DVD-ROM) is a DVD format with technology similar to the familiar DVD video disk, but with a more computer-friendly file structure. The DVD-ROM format was designed to store the same type of computer data typical of a CD-ROM, and is intended for use in DVD-ROM drives in a personal computer. DVD-ROMs have seven times the storage capacity of CD-ROMs.

DVD-ROM is sometimes described as a "bigger bit bucket," meaning that it is a larger storage space, and one that can be filled with whatever the user chooses, such as video, music, or computer-specific data. A DVD-ROM drive is similar to the CD-ROM drive, but with enhanced optical engineering that enables it to read the greater data load. DVDs, although the same size as CDs, have varying storage capacities of up to 17GB (this is a format called DVD-18), compared with the standard CD's approximate (and unvarying) capacity of 750MB. DVDs increase the numbers of pits and lands (lower and higher areas on the disc that are read by the laser and recorded as binary data) by decreasing both the size of the pits and the track pitch (space between tracks). In order to read the data from the smaller pits, the laser wavelength used by DVD-ROM drives was also reduced significantly.

DVD-ROM drives have a base speed of 1.32 megabytes/second; specific drive speeds are expressed as multiples of base, in the same way that CD-ROM drives are. DVD-ROM drives are backward compatible, and can read CD-ROMs, usually at speeds comparable to a 24X or 32X CD-ROM drive. The DVD-ROM drive - which is being manufactured by most makers of CD-ROM drives - is expected to replace the CD-ROM in the near future.

DVD-RAM

Digital Versatile disc - Random Access Memory (DVD-RAM) is an adaptation of DVD-ROM that uses magneto-optical technology to record data, both on the grooves and the lands (flat areas) of the disk. DVD-RAM , were released by the DVD Forum in 1998. Like most DVD formats, DVD-RAM can contain any type of information, such as video, text, audio, and computer data; however, at 2.6 gigabytes, the storage capacity is much lower than the other types of DVD. Single-sided DVD-RAM disks can be read by DVD-ROM drives, but double-sided DVD-RAM disks are not compatible with most DVD-ROM drives. Hitachi's DVD-RAM drive was introduced in 1998. The Hitachi drive could record and play single and double-sided DVD-RAM disks and could play CD-ROM, CD-R, CD-RW, and audio CDs .

DVD-Audio

DVD-Audio (DVD-A) is a DVD format developed by Panasonic. The DVD Forum released the final DVD-A specification in March of 1999. The new DVD format is said to provide at least twice the sound quality of audio CD on disks that can contain up to seven times as much information. Various types of DVD-A-compatible DVD players are being manufactured, in addition to the DVD-A players specifically developed for the format.

Almost all of the space on a DVD video disc is devoted to containing video data. As a consequence, the space allotted to audio data, such as a Dolby Digital 5.1 soundtrack, is severely limited. A lossy compression technique - so-called because some of the data is lost - is used to enable audio information to be stored in the available space, both on standard CDs and DVD-Video disks. In addition to using lossless compression methods, DVD-A also provides more complexity of sound by increasing the sampling rate and the frequency range beyond what is possible for the space limitations of CDs and DVD-Video. DVD-Audio is 24-bit, with a sampling rate of 96kHz; in comparison, DVD-Video soundtrack is 16-bit, with a sampling rate of 48kHz, and standard audio CD is 16-bit, with a sampling rate of 44.1kHz.

DVD-R

Digital Versatile disc - Recordable (DVD-R) is a type of *write once, read many* (WORM) DVD format that allows the user to record a single time on a DVD disk. DVD-R specifications, were released by the DVD Forum in 1997. Similarly to CD-R, DVD-R can contain any type of information, such as video, text, audio, and computer data, for example. DVD-R disks can be played on any type of DVD playback device that can handle the type of information stored, such as a DVD-ROM drive, or a DVD video player. DVD-R disks are read at the same speeds as commercially made DVDs.

DVD-R recording, like CD-R recording, is enabled by the use of a layer of organic dye that is permanently changed by exposure to a finely focused laser beam. The dye layer is coated onto the DVD's base layer, a polycarbonate plastic substrate (the base layer of all CDs and DVDs), which is injection molded, and has a pre-grooved spiral track on its surface to guide the laser. To increase the storage capacity of DVDs, both the wavelength and aperture size of the laser are decreased so that smaller pits (the areas read by the laser to obtain binary data) can be created - reading the disc also requires the same changes. Once the data has been written, the dye layer is coated with a thin, reflective metal coat that will enable the laser to read data from the differences in the way pits and lands reflect light. DVD-Rs can be written in a single session (called write-at-once recording) or incrementally, in a process similar to the packet writing technology used for CD-Rs.

DVD-RW

Digital Versatile disc - Rewritable (DVD-RW) is a DVD format that allows the user to record and erase multiple times on a single DVD disk. DVD-RW specifications were released as Book F in 1999 by the DVD Forum.

A slightly different rewritable DVD format, DVD+RW is backed by a group of companies known as the DVD+RW Consortium, made up of Philips, Sony, Hewlett-Packard, Mitsubishi Chemical, Yamaha, and Ricoh.

Similarly to CD-RW and DVD-R, DVD-RW can contain any type of information, such as video, text, audio, and computer data, for example. DVD-RW disks can be played on any type of DVD playback device that can handle the type of information stored, such as a DVD-ROM drive, or a DVD video player. Like DVD-R, DVD-RW disks can hold up to 9.4 gigabytes of data, compared to the 650 megabyte capacity of the CD.

DVD-RW recording is similar to CD-RW recording, just as the one-time recording format, DVD-R, has a similar process to that of CD-R. The basic structure of all CDs and DVDs - a polycarbonate substrate, a thin, reflective metal layer, and a protective outer layer - is the same. In the case of the one-time recording formats, an organic dye layer (which is permanently changed by exposure to a finely focused laser) serves as the recording medium. In a DVD-RW, the dye layer is replaced with an alloy that can

change back and forth from a crystalline form when exposed to a particular light, through a technology called phase change. The patterns created are less distinct than those of other CD formats, requiring a more sensitive device for playback.

Similarly to DVD-R, the DVD-RW's polycarbonate substrate is preformed with a spiral groove to guide the laser. The alloy phase-change recording layer is sandwiched between two dielectric layers that draw excess heat from the recording layer. After heating to one particular temperature, the alloy will become crystalline when it is cooled; after heating to a higher temperature it will become amorphous (won't hold its shape) when it is cooled. By controlling the temperature of the laser, crystalline areas and non-crystalline areas are formed. The crystalline areas will reflect the laser, while the other areas will absorb it. The differences will register as binary data that can be unencoded for playback. To erase or write over recorded data, the higher temperature laser is used, which results in the non-crystalline form, which can then be reformed by the lower temperature laser.

TYPES OF CD'S AND DIGITAL VERSATILE DISK (DVD'S)

CD-DA   COMPACT DISK-DIGITAL AUDIO

CD-ROM   (READ-ONLY-MEMORY)

CD-ROM TYPES   CD-ROM STORAGE OF COMPUTER DATA
                                       CD-ROM STORAGE FOR COMPRESSED
                                       AUDIO OR VIDEO/GRAPHIC DATA

CD-R TYPE AND WRITE ONCE - CD'S FOR AUDIO/VIDEO
                                       CD'S FOR COMPUTER DATA

CD-RW   REWRITEABLE

CD-ROM XA   EXTENDED ARCHITECTURE

CD-i   USED IN EDUCATIONA SYSTEM

BRIDGE DISK   THREE BRIDGE DISC FORMATS

ENCHANCED CD   USED BY RECORDING ARTISTS

CD-MO   USE MAGNETIC FIELD TO STORE DATA
(MAGNETO-OPTICAL)

MULTISESSION CD   DATA CAN BE ADDED AT DIFFERENT TIMES

SUPER AUDIO CD   HIGH RESOLUTION AUDIO CD FORMAT
(SACD)

DOUBLE DENSITY CD   INCREASE STORAGE CAPACITY OF CD
(DDCD)

DOUBLE –LAYERED DVD DISKS	DATA CAN BE CONSTRUCTED ON TWO LAYERS
DVD-ROM	READ ONLY MEMORY
DVD-RAM	DIGITAL VERSATILE DISK HOLDS ALL TYPES OF DATA
DVD-AUDIO	AUDIO DATA
DVD-R	WRITE ONCE AND READ
DVD-RW	RECORD AND ERASE MULTIPLE TIMES

****

Which CD or DVD format should I use?

Which disc format you should use is determined by the computer or device that you plan to use the disc in after it's burned. For more information about burning a CD or DVD in Windows, see mshelp://windows/?id=b47eb51a-ea6d-4d97-97b0-2d07a5931698**.**

The following sections explain how to determine which format to choose when using Windows Explorer to burn a data disc (a type of disc that is useful for storing, archiving, and sharing files among different computers and devices). If you want to create other types of discs, such as a DVD-Video disc (to play in a regular DVD player) or an audio CD (to play in a regular CD player), you'll need to use a different program or feature of Windows.

Pick the appropriate disc and format for your needs

Find an example in the following table that best describes your situation. Then, insert the recommended disc, and choose the appropriate disc format when you prepare your disc for burning.

The type of recordable disc you should choose depends on a few different factors, such as:

- **The types of recordable discs that work with your disc burner.**

- **The disc drive on the computer or device that you plan to use the disc in after it's burned and the types of recordable discs the computer or device can read.**
- **The total size for all the files you plan to burn to a disc.**

  A typical recordable CD can hold about 650-700 megabytes (MB), whereas a typical recordable DVD can hold over six times more than that at about 4.7 gigabytes (GB). However, the total amount of disc space that you can use to burn files to the disc is less than the amount that's often listed on the disc itself. This is because the disc capacity is calculated differently when it's used in a computer. For example, a typical DVD-R that has a listed disc capacity of 4.7 GB can only store about 4.37 GB of data on the disc.

The following table describes different CD or DVD burning scenarios and provides advice about which format to use.

To	Use this
Burn any kind of file and use the disc in a Windows XP or later computer.	**Disc: CD-R, CD-RW, DVD-R, DVD-R DL, DVD+R, DVD+R DL, DVD-RW, DVD+RW, or DVD-RAM** **Format: Live File System**
Burn any kind of file and use the disc in any computer, including versions of Windows earlier than Windows XP.	**Disc: CD-R, CD-RW, DVD-R, DVD-R DL, DVD+R, DVD+R DL, DVD-RW, DVD+RW, or DVD-RAM** **Format: Mastered**
Burn any kind of file and use the disc in a Windows Vista or later computer.	**Disc: CD-R, CD-RW, DVD-R, DVD-R DL, DVD+R, DVD+R DL, DVD-RW, DVD+RW, DVD-RAM, BD-R, or BD-RE** **Format: Live File System or Mastered**
Burn music or pictures and use the disc in regular CD, DVD, or Blu-ray Disc players	**Disc: CD-R, CD-RW, DVD-R,**

To	Use this
that can play MP3 files and digital pictures.	DVD+R, DVD-RW, or DVD+RW

Format: Mastered |
| Burn music or pictures and use the disc in any computer, including versions of Windows earlier than Windows XP. | Disc: CD-R, CD-RW, DVD-R, DVD+R, DVD-RW, or DVD+RW

Format: Mastered |
| Be able to add and erase one file or many files over and over (like you can with a USB flash drive) and use the disc in a Windows XP or later computer. | Disc: CD-R, CD-RW, DVD-R, DVD-R DL, DVD+R, DVD+R DL, DVD-RW, DVD+RW, or DVD-RAM

Format: Live File System |
| Be able to add and erase one file or many files over and over (like you can with a USB flash drive) and use the disc in a Windows 7 computer. | Disc: CD-R, CD-RW, DVD-R, DVD-R DL, DVD+R, DVD+R DL, DVD-RW, DVD+RW, DVD-RAM, BD-R, or BD-RE

Format: Live File System |
| Leave a disc in your computer's burner and copy files to it at your convenience, such as for routine backup. | Disc: CD-R, CD-RW, DVD-R, DVD-R DL, DVD+R, DVD+R DL, DVD-RW, DVD+RW, DVD-RAM, BD-R, or BD-RE

Format: Live File System |

Understanding the difference between the Live File System and Mastered disc formats

When choosing a disc format, it's helpful to understand what the differences are, so you can pick the right format for the disc you're going to burn. Discs that use the mshelp://windows/?id=308079e3-26ca-4b0a-b02e-3499bdeb58a4 - gtmt_live_file_system_def format are often more convenient because you can copy selected files immediately and as often as you want, just like you can with a mshelp://windows/?id=df341665-df00-412c-af0e-da64190bb918 - gtmt_usb_flash_drive_def. Alternatively, Live File System discs can't be used in all computers or in a CD, DVD, or Blu-ray Disc player. Use this guide to understand the difference

between Live File System and mshelp://windows/?id=867488cc-017a-400a-9df4-a37096aac7b0 - gtmt_mastered_def **discs:**

Discs formatted with the Live File System option:

- **Have this option name in the Burn a Disc dialog box: Like a USB flash drive.**
- **Work like a USB flash drive, which means that you can copy files to disc immediately without having to burn them later in a separate step.**
- **Give you the option to delete one file, many files, or all files. For more information about erasing files from a disc, see** mshelp://windows/?id=c84afc5f-a21b-4229-b15b-850b548ee4b2**.**
- **Are convenient if you want to keep a disc in your CD, DVD, or Blu-ray Disc burner and copy files whenever the need arises.**
- **Are compatible only with Windows XP and later versions of Windows.**
- **Aren't blank after they're formatted.**

Discs formatted with the Mastered option:

- **Have this option name in the Burn a Disc dialog box: With a CD/DVD player.**
- **Don't copy files immediately; you need to assemble the entire collection of files that you want to copy to the disc, and then burn them all at once.**
- **Don't give you the option of deleting just one file or a few. All files on the disc will be deleted. For more information about erasing files from a disc, see** mshelp://windows/?id=c84afc5f-a21b-4229-b15b-850b548ee4b2**.**
- **Are convenient if you want to burn a large collection of files, such as a music CD.**
- **Are compatible with other computers and consumer electronic devices, such as CD players, DVD players, and Blu-ray Disc players.**

Why are there different versions of the Live File System format?

Each version of the Live File System format is compatible with different operating systems. Depending on which computers you plan to use a disc in, you might need to select a different version of Live File System. If you plan to

use your disc on a later version of Windows, however, you shouldn't need to change the version of the Live File System you use. If you need to make discs that are compatible with earlier versions of Windows, use the following table to select the right Live File System version for your needs:

The following table describes Live File System versions and their appropriate uses.

Live File System version (UDF)	Best for
1.50	This version is compatible with Windows 2000 (and later) and Windows Server 2003 (and later). It might not be compatible with Windows 98 computers.
2.00	This version is compatible with Windows XP (and later) and Windows Server 2003 (and later). It might not be compatible with Windows 98 and Windows 2000 computers.
2.01	This is the default version that's compatible with Windows XP (and later) and Windows Server 2003 (and later). It might not be compatible with Windows 98 and Windows 2000 computers.
2.50	This version is designed for Windows Vista (and later). It might not be compatible with earlier versions of Windows.

For information about formatting a disc, see mshelp://windows/?id=3fdbacc1-0abd-4c62-a739-a3760508b59e.

What are the differences between the various kinds of CD and DVD discs?

The following table describes the different kinds of CDs and DVDs and provides information about their appropriate use.

Disc	General information	Capacity	Compatibility
CD-ROM	Known as a read-only disc, usually used to store commercial programs and data. You can't add or delete information on a CD-ROM.	650 MB	Highly compatible with most computers and devices.

Disc	General information	Capacity	Compatibility
CD-R	You can burn files to a CD-R more than once (each time is referred to as a session), but you can't delete files from a Mastered disc. Each burn is permanent.	650 MB 700 MB	**You must** mshelp://windows/?id=700e8fb4-48a5-4b8c-a599-fd9978fcc8de - gtmt_close_def **the session to read this disc in a different computer. Highly compatible with most computers and devices.**
CD-RW	You can burn files to a CD-RW more than once. You can also delete unwanted files from the disc to reclaim space and add additional files. A CD-RW can be burned and erased many times.	650 MB	Compatible with many computers and devices.
DVD-ROM	Known as a read-only disc, usually used to store commercial programs and data. You can't add or delete information on a DVD-ROM.	4.7 GB	Highly compatible with most computers and devices.
DVD-R	You can burn files to a DVD-R more than once (each time is referred to as a session), but you can't delete files from the disc. Each burn is permanent.	4.7 GB	You must close the session to read this disc in a different computer. Highly compatible with most computers and devices.
DVD+R	You can burn files to a DVD+R more than once (each time is referred to as a session), but you can't delete files from the disc. Each burn is permanent.	4.7 GB	You must close the session to read this disc in a different computer. Compatible with many computers and devices.

Disc	General information	Capacity	Compatibility
DVD-RW	You can burn files to a DVD-RW more than once (each time is referred to as a session). You can also delete unwanted files from the disc to reclaim space and add additional files. A DVD-RW can be burned and erased many times.	4.7 GB	You don't need to close the session to read this disc in another computer. Compatible with many computers and devices.
DVD+RW	You can burn files to a DVD+RW more than once (each time is referred to as a session). You can also delete unwanted files from the disc to reclaim space and add additional files. A DVD+RW can be burned and erased many times.	4.7 GB	You don't need to close the session to read this disc in another computer. Compatible with many computers and devices.
DVD-RAM	You can burn files to a DVD-RAM more than once. You can also delete unwanted files from the disc to reclaim space and add additional files. A DVD-RAM can be burned and erased many times.	2.6 GB 4.7 GB 5.2 GB 9.4 GB	DVD-RAM discs can generally be used only in DVD-RAM drives and might not be readable by DVD players and other devices.
DVD-R DL	You can burn files to a DVD-R DL more than once (each time is referred to as a session), but you can't delete files from a	8.5 GB	You must close the session to read this disc in a different computer. Compatible with some computers and many newer DVD players.

Disc	General information	Capacity	Compatibility
DVD+R DL	Mastered disc. Each burn is permanent. You can burn files to a DVD+R DL more than once (each time is referred to as a session), but you can't delete files from a Mastered disc. Each burn is permanent.	8.5 GB	You must close the session to read this disc in a different computer. Compatible with some computers and many newer DVD players.
BD-R	You can burn files to a BD-R once (in one session), but you can't delete files from the disc. Each burn is permanent.	25 GB	You must close the session to read this disc in a different computer. Compatible with computers running Windows 7.
BD-R DL	You can burn files to a BD-R DL once (in one session), but you can't delete files from the disc. Each burn is permanent.	50 GB	You must close the session to read this disc in a different computer. Compatible with computers running Windows 7.
BD-RE	You can burn files to a BD-RE more than once (each time is referred to as a session). You can also delete unwanted files from the disc to reclaim space and add additional files. A BD-RE can be burned and erased many times.	25 GB	You don't need to close the session to read this disc in another computer. Compatible with computers running Windows 7.
BD-RE DL	You can burn files to a BD-RE DL more than once (each time is referred to as a session). You can also	50 GB	You don't need to close the session to read this disc in another computer. Compatible with computers running Windows 7.

Disc	General information	Capacity	Compatibility
	delete unwanted files from the disc to reclaim space and add additional files. A BD-RE DL can be burned and erased many times.		

For more information about setting the options for closing a session when a disc is ejected, see mshelp://windows/?id=6ba29b2b-0804-44ba-b277-a64fc439c79c**.**

Note

- **For another computer to be able to read a Blu-ray Disc, that computer must have a Blu-ray Disc burner. For another computer to be able to read a DVD disc, that computer must have a DVD or Blu-ray drive. CDs can be used in both CD and DVD drives, and in most (but not all) Blu-ray drives.**

✱✱ ✱✱✱✱✱✱✱✱✱✱✱✱✱✱✱✱✱✱✱✱✱

Reinstall CD-ROM/CD-RW/DVD drivers in Windows XP:

1. Click Start and then Control Panel.
2. In the Control Panel, double-click System. System properties are displayed.
3. Click Hardware and then Device Manager.
4. In the Device Manager, navigate to CD-ROM and click (+) sign next to it. This will display all the CD-RW drivers.
5. Select the drive, right-click it, select uninstall, and then click OK.
6. Repeat this process until there is no listing for CD-ROM.
7. Close all windows and restart the computer.
8. When Windows restart, it will auto-detect and reinstall the CD-RW drivers.

NOTE: This HP computer was shipped with one 16X DVD-ROM Drive and a 12x8x32 CD-RW Drive. Click the link below to see the list of drivers,etc. You can find the drivers for your CD-Rom by going to the manufacturers web site and clicking support. Enter the info requested to ID your computer.

****
****

Alligator Alert

The Louisiana and Mississippi State Department of Fish and
Wildlife is advising hikers,hunters, fishermen, and golfers to
take extra precautions and keep alert for alligators while in
parishes and counties They advise people to wear noise-producing
devices such as "little bells" on their clothing to alert, but
not startle the alligators, unexpectedly.

They also advise the carrying of "pepper spray" in case of an
encounter with an alligator.
It's also a good idea to watch for fresh signs of alligator
activity and be able to recognize the difference between young
alligator and adult alligator droppings.
Young alligator droppings are small, contain fish, bones and
possibly bird feathers.

Adult alligators droppings have................... little bells
in them and smell like pepper.
****

Jmax

Jmax's Website http://www.jmaxbits.com/
**Jmax Bits Newsletter is now posted each Monday & Thursday on the website.
You have the option for a .pdf or a .rtf file.**

1.For help with a computer problem, put HELP in the subject line and give me info about the computer you're using, if you know it.

2.To view or print Jmax Bits Good Services List in the Villages area, click link www.jmaxbits.com

3. To sign up for the non-computer newsletter, send an email to VLGSClassifieds@aol.com. Put SUBSCRIBE in the subject line. To send an Ad, place AD in the subject line.

4. The Villages Computer Club's web page: Click here: Welcome To The Villages Computer Club

To add your name to the VCC announcements list, send email to TheVCC-subscribe@yahoogroups.com

5. Fred Benson's website www.thevillagescomputerbasics.com