Technology Institute for Music Educators

Technology-Assisted Learning and Digital Media
TI:ME 1B

Student & Instructor Manual

David Mash, Author and Chair
Floyd Richmond, Author
Stefani Langol, editor and consultant

2001 Editorial Committee:
Bill Bauer, Frank Clark, George Hess, Stefani Langol, Dan Newsom, Brian Post,
2001 Editor-in-Chief: Floyd Richmond

2002 Editorial Committee:
Bill Bauer, George Hess, Kim Walls, Scott Watson, David Williams, Joe Pisano
2002 Editor-in-Chief: Floyd Richmond

Revised 2003-2005, 2007, Floyd Richmond

2011 Editorial Committee
Amy Burns, Jay Dorfman, Hank Wajda
2011 Editor-in-chief: Jay Dorfman

Copyright © 1998-2011 by the Technology Institute for Music Educators
# Table of Contents

Introduction – Technology-Assisted Learning and Digital Media ........................................ 4  
Parts 1 and 2 – Technology Assisted Learning and Web Applications .................................... 6  
  Part 1 – Software Applications and Websites ........................................................................ 7  
    Lesson 1.1 – Demonstrations and Explorations of Various Software applications .................. 7  
    Lesson 1.2 – Demonstrations and Exploration of Websites .................................................. 7  
    Lesson 1.4 – Demonstrations of Professional Websites ....................................................... 7  
    Lesson 1.5 – Additional Commercial Websites ................................................................. 8  
    Class Activity 1.1 – Website Evaluation .............................................................................. 8  
    Class Activity 1.2 – Lesson Plan Development .................................................................... 8  
    Lesson 1.6 – Search Engines ............................................................................................... 8  
    Class Activity 1.3 – Search Engine Techniques .................................................................... 8  
  Part 2 – Web 2.0 ......................................................................................................................... 10  
    Lesson 2.1 – Music Education Wikis ..................................................................................... 11  
    Lesson 2.2 – Blogs ................................................................................................................. 11  
    Lesson 2.3 – Social Networking ............................................................................................ 11  
    Class Activity 2.1 – Creating a Social Website .................................................................... 12  
  Parts 3 and 4 – Multimedia Content Development ................................................................. 13  
  Part 3 – Text and Still Images ................................................................................................ 14  
    Lesson 3.1 – Text Fonts, Styles, Alignment and Sizes ............................................................ 14  
    Lesson 3.2 – Citing Sources and Copyright ......................................................................... 14  
    Lesson 3.3 – Wrappers for Text ............................................................................................. 15  
    Class Activity 3.1 – Text Project ............................................................................................ 15  
    Lesson 3.4 – Image Types and their Uses ............................................................................. 15  
    Lesson 3.5 – Capturing Still Images ..................................................................................... 16  
    Class Activity 3.2 – Searching for, Downloading and Organizing Still Images ..................... 16  
    Lesson 3.6 (Optional) – Backing up ...................................................................................... 16  
    Lesson 3.7 – Using Digital Images ....................................................................................... 16  
    Class Activity 3.3 0 Wrappers for Images ........................................................................... 17  
  Part 4 – Digital Audio and Video ............................................................................................. 18  
    Lesson 4.1 – Digital Audio .................................................................................................... 18  
    Class Activity 4.1 – Capturing Audio .................................................................................... 18  
    Lesson 4.2 – Web 2.0 Audio .................................................................................................. 18  
    Class Activity 4.2 – Web 2.0 Audio Sites ............................................................................ 19  
    Lesson 4.3 – Introduction to Live Video Streaming and Collaboration ..................................... 19  
    Lesson 4.4 – Video on the Internet ....................................................................................... 19  
    Class Activity 4.3 (Optional) – Using Found Video Footage ............................................... 20  
    Lesson 4.5 – Shooting Original Video Footage .................................................................... 20  
    Class Activity 4.4 – Shooting Original Video Footage ......................................................... 20  
    Lesson 4.6 – Web 2.0 Sites that Use Video .......................................................................... 20  
  Part 5 – Multimedia Distribution ........................................................................................... 22  
    Lesson 5.1 – Slide-based Presentation Tools ....................................................................... 23
Lesson 5.2 (Optional) – Non-linear Presentation Tools ................. 23
Lesson 5.3 – Presentation Techniques and Best Practices .......... 23
Class Activity 5.1 – Pedagogical Applications of Presentation Tools ................................................................. 23
Lesson 5.4 – Web Delivery Data Structures.......................... 24
Lesson 5.5 – File Sizes and Quality Trade-offs ....................... 24
Lesson 5.6 – Common Web Authoring Tools ......................... 24
Class Activity 5.2 – Creating an Educational Website ............... 25
Lesson 5.7 (Optional) – DVD Data Structures ....................... 25
Lesson 5.8 – Creating a DVD from Existing Footage ................. 25
Class Activity 5.3 – Pedagogical Applications of DVD ............... 25
Lesson 5.9 – Publishing to Web Video Services ...................... 25
Lesson 5.10 – General Introduction to Podcasts ...................... 26
Lesson 5.11 – Finding Podcasts ....................................... 26
Class Activity 5.4 – Locating and Evaluating Podcasts ............... 26
Class Activity 5.5 – Standards ........................................ 26
Appendix A – Music Education Websites for Exploration .......... 27
Appendix B – Websites of Professional Organizations ............... 29
Appendix C – Software and Website Evaluation Forms ............... 30
Appendix D – Web-based Lesson Plan .................................. 34
Appendix E – Data Types on the Internet ............................... 38
Appendix G – Standards Worksheet ...................................... 41
Introduction - Technology-Assisted Learning and Digital Media
TI:ME 1B

Description
Participants in this course will learn about a variety of digital media and technology-assisted teaching and learning tools that can be used to support their music curricula. Participants will connect to and use instructional materials from the Internet. Students will also learn to author multimedia projects which include text, graphics, video, and sound in the digital domain. Participants’ progress will be assessed through completion of class assignments, and, at the discretion of the instructor, assignments completed outside of class time.

Additional Information and Hardware Requirements
Technology-Assisted Learning and Digital Media supports 50% of the required class work for achieving TI:ME Level 1 certification. This course will serve a maximum of 16:1 teacher/student ratio, with each participant having their own computer/music workstation consisting of a multimedia-capable computer, and audio and video support equipment. The teacher should have their own station which is connected to a projection device. All student and teacher stations should be connected to audio playback systems for collaborative evaluation of work. The classroom must have the ability to connect to the Internet, with direct LAN access desirable. Peripheral equipment such as scanners, digital still cameras, digital video cameras and digital audio recorders will also be required, and students are encouraged to bring their own equipment so that they become comfortable with those devices outside of the class.

Students taking this course must have basic computer skills including:
• using a computer keyboard;
• using a mouse for pointing, clicking, and dragging;
• navigating the Internet; and
• experience using a computer’s filing system, including the use of internal and external drives, files, folders, and directory systems as well as experience saving, naming, and copying files.

Students are encouraged to bring their own video and audio recording devices to use for this course so that they become familiar with devices to which they will have access. Also, students should be encouraged to bring media materials from their own lives and teaching positions to be used in materials they will create in class.
Software Requirements

This course manual refers to many categories of multimedia software, and to many individual titles within those categories. It is recommended that students gain exposure to as many titles as possible. Given the prohibitive cost of software, the use of freeware and shareware is encouraged. Software choices are generally left to the discretion of the instructor.

An Internet browser is required, as are various multimedia authoring programs. All software choices (or equivalent programs) should be available for Macintosh and Windows platforms, or the instructor should offer equivalent titles for software that is platform-specific.

Summary of Assessment

• Students will actively participate in all teacher presentations and lessons.
• Students will complete all class activities, projects and worksheets.
• Students will attend all scheduled workshop sessions.
• Students will complete any pre-class or post-class assignments by specified dates.

Note regarding Timeliness of Material

All materials referred to in this manual, including URLs, videos and articles, have been checked for accuracy and availability as of mid-2011. Instructors are encouraged to check links that they intend to use in classes to make sure they are active, and to integrate new technologies that may have entered the marketplace since the publication of these materials.
Parts 1 and 2 – Technology-Assisted Learning and Web Applications

Objectives
By the conclusion of this section of the course, educators will...

1. Thoroughly evaluate two software applications using the worksheet provided and present them to the class.
2. Browse several websites and thoroughly evaluate two music educational websites using the worksheet provided and present them to the class.
3. Create a lesson plan that utilizes software applications and/or websites for their classrooms and teach that lesson to the class.
4. Post their work to a class Wikispace

Assessment
Participants will complete all class worksheets and assignments at the discretion of the instructor.
Part 1 – Software Applications and Websites

Lesson 1.1 – Demonstrations and Exploration of Various Software Applications

The instructor will demonstrate K-12 software applications such as Sibelius’s Groovy Series, Starclass, Auralia, Instruments, Compass, Alfred’s Interactive Musician, O-Generator, World Music, and Harmonic Vision’s Music Ace. The demonstration will include the following elements:

- Logging in or creating a login
- Utilizing the lessons
- Creating a grading rubric, and using it for assessment
- Utilizing games and/or quizzes
- Utilizing creative/sequencing portions of the applications

Lesson 1.2 – Demonstrations and Exploration of Websites

The instructor will lead a demonstration of K-12 websites such as those listed in Appendix A.

The demonstration will include the following elements:

- Using the websites in a classroom with one computer connected to an interactive whiteboard or screen, a classroom with multiple computers, or a computer lab
- Teaching a lesson using the website so the educators can experience how a website can enhance the music concepts being taught in the lesson
- Developing lessons with the websites that align to national and local standards

Lesson 1.3 – Demonstrations of Professional Websites

The instructor will show various professional websites and music retailers, such as those listed in Appendix B, which will help the educators network with other music educators, and help them find great deals throughout the school year.

Lesson 1.4 – Interactive Whiteboard Resources

The instructor will show various websites that serve as resources for lessons that can be used on an interactive whiteboard. Some examples include:

- http://resources.mrsfriedmanmusic.com - Smart Board Music
- http://exchange.smarttech.com/search.html?q=music - Smart Board lessons from the Smarttech website
- http://www.longwood.k12.ny.us/longsmart3.html - Smart Board Elementary Lessons
• http://musictechie.pbworks.com/Promethean-Board - Carol Broos’s Promethean Music Lessons
• http://www.prometheanplanet.com/en/resources/ - Promethean lessons from the software site

Lesson 1.5 – Additional Commercial Websites

The instructor will show the websites of TI:ME commercial supporters. Links to these companies’ websites will be available through the TI:ME website.

Class Activity 1.1 – Website Evaluation

Students will explore the software applications and the websites from Lessons 1.1 through 1.5. They will complete at least one thorough evaluations of software and websites each using the form in Appendix C.

Class Activity 1.2 – Lesson Plan Development

Students will complete this unit by writing a lesson plan that utilizes a software application or website and is applicable to their current teaching situation. The lesson plan template can be found in Appendix D. Optionally, these lesson plans can be uploaded to the TI:ME website lesson plan database. Also, if time permits, the students may teach the lessons to the rest of the class.

Lesson 1.6 – Search Engines

The instructor will lead a discussion in using popular search engines to find classroom items that can be used in lessons. These may include:

• Pictures
• Sound files
• Websites
• Resources
• Organizations
• Videos
• Maps
• News

Class Activity 1.3 – Search Engine Techniques

• How to save items from the search engine
• When to utilize copying and pasting
• Effective and ineffective search engine techniques
• Guidelines for improving search results
• Methods for making the search more specific or more general

Students will search for specific information on the Internet as requested by the instructor. For example, the instructor will ask for the location of specific documents such as the
Copyright Revisions Act of 1976. Students may also compete to see who can be the first to find items such as a picture of Mozart at a piano or a picture of Beethoven's boyhood home. The students will suggest reasons why publishers may not wish to include the full text of articles or books on the Internet. Students will discuss how searching may be used as an educational activity (Web Scavenger Hunts, Web Quests, etc.) Participants will complete the Internet Scavenger Hunt Activity Sheet (Appendix E).
Part 2 – Web 2.0

Objectives
By the conclusion of this section of the course, educators will...

1. Create a wiki that they can utilize in their own classroom
2. Explore blogs and learn how to utilize them in their own lives and/or in their classrooms
3. Explore social bookmarking and methods of saving and sharing Internet resources with others.
4. Explore Wikispaces and learn how to utilize them in their own lives and/or in their classrooms
5. Explore how social networking sites like Facebook and Twitter can be utilized in the music classroom
6. Learn the importance and value of Web 2.0 in music education

Assessment
Participants will complete all class worksheets and assignments at the discretion of the instructor.
Lesson 2.1 – Music Education Wikis

The instructor will lead a demonstration of various music and education wikis and how to utilize them in a music classroom. The instructor will show how to create a wiki utilizing services such as Wikispaces or PBworks. The demonstration will include the following:

- Creating an account
- Creating pages
- Creating a style and font
- Adding photos, links, and files
- Using the navigation tools
- Making wikis public or private
- Moderating or turning off comments
- Integrating YouTube, Google calendars, etc., into wikis

Lesson 2.2 – Blogs

The instructor will lead an exploration of a variety of music education blogs and how to utilize them in students’ daily lives and/or their music classrooms. The instructor will show how to create a blog using services such as Wordpress, Blogger, Blogspot, or Typepad. The demonstration will include the following:

- Creating an account
- Creating a post
- Creating a style and font
- Adding photos, links, and files
- Making blogs public or private
- Moderating or turning off comments
- Integrating Youtube, etc., into blogs
- Appropriateness and professional concerns related to teachers and students blogging

Lesson 2.3 – Social Networking

The instructor will lead an exploration of Facebook, Twitter, Skype and other social networking services, and how to utilize them in music classrooms. The demonstration may include the following:

- Following music education groups in Facebook
- Using Twitter to follow professional organizations, conferences, and other music educators
- Using Twitter hashtags such as #musedchat, #mused, #musiced, and #musicpln (as examples of tweets in the field of music education)
- Utilizing Skype in the music classroom to Skype to other music classrooms, students, countries, etc.
Class Activity 2.1 – Creating a Social Website

Educators will create their own wiki, blog, or social media feed that will be applicable for their music classrooms right away. Optionally, depending on the students’ prior experiences, these sites may include multimedia elements.
Parts 3 and 4 – Multimedia Content Development

Objectives
By the conclusion of this section of the course, educators will...

1. Demonstrate proficiency with text as a multimedia component;
2. Understand the implications of copyright on educational uses of multimedia;
3. Demonstrate proficiency in the uses of still images as a multimedia component;
4. Demonstrate proficiency with video as a multimedia component.

Assessment
Participants will complete all class worksheets and assignments at the discretion of the instructor.
Part 3 – Text and Still Images

Lesson 3.1 – Text Fonts, Styles, Alignments and Sizes

The instructor will lead a discussion demonstrating the differences between various fonts, styles, alignments and sizes of text. Possible strategies and materials in this discussion include:

- Watching YouTube videos at these addresses -
  http://www.youtube.com/watch?v=_lfE3Q4kiSE and
  http://www.youtube.com/watch?v=qU830I2k2ug&feature=related
- Displaying examples of Serif and Sans Serif fonts in the contexts of various print and online materials
- Displaying the effectiveness of various fonts in print, presentations and on the web
- Using text utilities and gadgets such as
  o epals.com (electronic penpals)
  o blogging and microblogging tools
  o http://perkupprojects.wikispaces.com/Logos
  o Word walls
  o Ebook managers such as Calibre for Mac or Windows (http://calibre-ebook.com/)

Lesson 3.2 – Citing Sources and Copyright

The instructor will lead a discussion about copyright in education. Topics included in this discussion may include general copyright law and the fair use doctrine. The instructor may wish to use some of these Web 2.0 copyright resources:

- List of Copyright Links for Students -
  http://www.surfnetkids.com/copyright_for_students.htm
- Copyright for Students -
  http://www.ncwiseowl.org/zones/copyright/students.html
- CyberBee - http://www.cyberbee.com/cb_copyright.swf
- Creative Commons - http://creativecommons.org/about
- What’s Copyright? Video –
  http://mediaeducationlab.com/1-whats-copyright-music-video
- What’s Copyright - Companion Lesson Plan
  http://mediaeducationlab.com/section-1-understanding-copyright
- What is Copyright? http://www.youtube.com/watch?v=G2jmapccuK0
- Copyright and Fair Use
  http://www.youtube.com/watch?v=MHTVI0MDF0w&feature=fvwrel

The instructor will lead a discussion about the importance of proper academic format for citing sources. It is important that students become familiar with the process of seeking
permission to use multimedia content, and avoid using such materials that could cause a copyright violation. The following websites make citing sources very easy. Possible strategies and materials in this discussion include:

- Create works cited pages for websites, print material, and more (APA, MLA Styles) with http://www.easybib.com
- Another great, free works-cited builder - http://www.bibme.org/
- Citing Sources for Teens - http://www.ipl.org/div/aplus/linkciting.htm
- The use of bibliographic software such as EndNote, Refworks

Lesson 3.3 – Wrappers for Text

The instructor will lead a discussion and demonstration about some popular tools for wrapping and disseminating text. Some of these tools may include:

- Wordle - www.wordle.net (creates vocabulary/word clouds)
- Tagxedo – www.tagxedo.com (creates word clouds in shape forms)
- Glogster – www.glogster.com/edu (creates virtual posters)
- Fckeditor – www.fckeditor.net (Web based word processor)
- Formassembly – www.formassembly.com (Create, host & manage forms)
- Google Docs – www.docs.google.com
- Goffice – www.goffice.com (Web based word processor)
- Ijot – www.ijot.net (Write, manage, publish share text files)
- Inetword – www.inetword.com (Web based word processor)
- Jotform – www.jotform.com (Create, host & manage forms)
- Synchroedit – www.synchroedit.com (Group document editor)
- Wideword – www.wideworld.com (Collaborative word processor)
- Writeboard – www.writeboard.com (Collaborative word processor)
- Writely – www.writely.com (Collaborative word processor)
- Zohowriter – www.zohowriter.com (Collaborative word processor)

Class Activity 3.1 – Text Project

Students will create a document that might be used in an educational context such as a concert program, parent newsletter, promotional materials, using some above technologies.

Lesson 3.4 – Image Types and their Uses

The instructor will lead a demonstration and discussion about various types of images found on the Internet and their practical uses. Topics for presentation and discussion may include:

- Bitmaps
- Vector-based images
- Specific formats such as JPEG, PNG, TIFF, GIF
Lesson 3.5 – Capturing Still Images

The instructor will lead a demonstration and discussion regarding devices used for still image capture. Topics may include:

- Types of cameras including cell phone cameras, various formats of digital cameras (compact, point-and-shoot, DSLR, etc.)
- Typical uses and features of digital cameras
- Transferring images from camera to computer
- Scanning documents*

Class Activity 3.2 – Searching for, Downloading and Organizing Still Images

Students will use an image search engine or online archive to download images, and will use image organization software such as iPhoto or Windows Photo Gallery to explore organization strategies. Optionally, the teacher may demonstrate using these programs for more sophisticated functions such as editing, creating slideshows, and creating printed items such as calendars and greeting cards.

Lesson 3.6 (OPTIONAL) – Backing up

The instructor should discuss the importance of backing up data for both personal and professional uses. The instructor may wish to share strategies for data backup including:

- Using external hard drives
- Using removable media such as flash drives, CDs, DVDs, and SD cards
- Using cloud-based services such as DropBox, 4Shared, MobileMe and SkyDrive

Lesson 3.7 – Using Digital Images

The instructor will lead a demonstration and discussion about various uses of digital images. Topics may include:

- Simple editing techniques using OS-based tools
- Advanced editing tools using app-based tools such as Photoshop, Fireworks, etc.
- Online editing tools such as:
  - www.picnik.com
  - www.imagechef.com
  - www.aviary.com
- Creating slideshows using online development tools such as:
  - www.kizoa.com
  - www.photopeach.com
  - www.flixtime.com
  - www.vuvox.com

* Scanning music notation using OCR is not a part of this curriculum – it is covered in other TI:ME curricula.
Class Activity 3.3 – Wrappers for Images

Students will create an image- and text-based project using the tools demonstrated in lessons 3.1-3.7. Specific parameters for this project will be provided by the instructor based on the tools chosen in the class.
Part 4 – Digital Audio and Video

Lesson 4.1 - Digital Audio

The instructor will lead a presentation/discussion on foundational elements of digital audio. Content of this lesson should include:

- Distinguishing between analog and digital audio
- Properties of digital audio such as sample rate, bit depth/size
- Digital audio file types and compression codecs
- Schemes for storage of digital audio
- Digital audio capture devices (microphones and their characteristics, ADCs, handheld recorders, etc.)

Class Activity 4.1 – Capturing Audio

Students will engage in a series of activities to experience capturing of digital audio. Students should be able to do all of the following tasks:

- Import sound from a CD using a common software application such as iTunes
- Capture sound from an analog source using a microphone connected to a computer
- Capture sound using a stand-alone/hand-held digital recorder

Lesson 4.2 – Web 2.0 Audio

The teacher will lead a demonstration of some of the websites listed below that make robust use of audio on the web.

- Dangerous Decibels – www.dangerousdecibels.org - Teach your students how to protect their hearing
- Blabberize - blabberize.com/ - Create animated pictures with sound
- VOKI - www.voki.com/ - Create speaking avatars
- Bebop – www.bebopular.com - Compare music calendar against your iTunes catalogue.
- Clickcaster – www.clickcaster.com - Record, license, publish & promote your radio show.
- Lastfm – www.last.fm - Profile your taste, share, personalize your radio.
- Odeo – www.odeo.com - Record & share audio.
- Pod bop – www.podbop.com - Listen to bands that visit your city.
• Soundcloud – www.soundcloud.com - Upload or record audio on the web
• Streampad – www.streampad.com List, listen & share your music.

Class Activity 4.2 – Web 2.0 Audio Sites

Students will complete a creative project using one or more of the Web 2.0 audio sites listed above. Examples of these projects may include:

• Aviary.com – use MYNA section to create a 16-measure introduction to an upcoming musical event with a short vocal voiceover.
• Voki.com – use Voki to create an animated avatar that sings a major scale, or rhythmically recites a tongue twister.

Lesson 4.3 – Introduction to Live Video Streaming and Collaboration

The instructor will lead a demonstration and discussion about the uses of live video. This may include applications such as Skype, iChat, FaceTime, Oovoo and uStream. The instructor should include in this discussion information about hardware and software requirements, and ways to promote video and audio quality.

If possible, the instructor should set up a live video chat with someone in a remote location to give students this experience.

Lesson 4.4 – Video on the Internet

The instructor will lead a demonstration of sources of existing video on the Internet. These may include, but are not limited to:

• YouTube
• TeacherTube
• Vimeo
• iTunes/iTunes U (video podcasts and for-sale content)

This lesson should also include demonstrations of methods by which content from these sites can be obtained and prepared for use in personal projects. Instructors should demonstrate tools for doing this such as:

• vixy.com
• zamzar.com
• keepvid.com
• savevid.com
• online-convert.com
Class Activity 4.3 (Optional) – Using Found Video Footage

Students will engage in a creative project using found video footage from the web. Examples of these projects include:

- Finding YouTube, TeacherTube or Student Produced Video; bookmarking in DIIGO.
- Splice Project - Create a one minute video collage made up of other edited clips.
- SAM Animation - Create a 30 second animation.

Lesson 4.5 – Shooting Original Video Footage

The instructor will lead a demonstration on the use of available video capture equipment. Students should understand how to load media (if necessary), how to use the basic functions of the camera, and should be aware of essential techniques for capturing good video.

This lesson should also include some theoretical information about digital video. This should include:

- Video formats and size/quality trade-offs
- Storage and transfer considerations
- Compression codecs

Class Activity 4.4 – Shooting Original Video Footage

Students will use video capture equipment to shoot a few minutes of original footage. This may be done in small groups if necessary. Students are encouraged to bring their own camera or a school-owned camera for this activity, with appropriate accessories such as cables, tripods and media readers.

The instructor will lead a demonstration and discussion about processes of editing video. Students should participate in this demonstration using video that they shot in previous activities. Tasks involved in this lesson may include the following:

- Connecting a camera to a computer and importing video
- Making edits
- Trimming clips
- Adding titles
- Adding transitions
- Adding other media assets such as sound effects, music, and still images
- Exporting video from editing applications for use in other contexts

Lesson 4.6 – Web 2.0 Sites that Use Video

The instructor will lead a demonstration and discussion of some web sites that make use of video. These sites may include:

- SillyWebcam - Take instant photos and play with neat effects VIA webcam.
  www.sillywebcam.com
• Adultswim - Episode previews, games, community. www.adultswim.com
• Ajaxilicious - Share your movies thru RSS. movies.ajaxilicious.be
• Blinkx - Personalized epg. searchus.blinkx.com
• Broadbandsports - Upload & share sports videos. www.broadbandsports.com
• Clipshack - Upload & send video. www.clipshack.com
• Dailymotion - Upload & share videos. www.dailymotion.com
• Evoketv - Localized epg (ajax). www.evoketv.com
• Getdemocracy - Watch or make TV. www.getdemocracy.com
• Mefeedia - Videoblog search. www.mefeedia.com
• Mightyv - Web based tv search & epg (UK). www.mightyv.com
• Openvlog - Upload & record video. www.openvlog.com
• Pooxi - Upload & (revenue) share video. www.pooxi.com
• Silly Webcam - Flash video using webcam. www.sillywebcam.com
• TeacherTube - Think YouTube for Teachers www1.teachertube.com
• Theunseenvideo - Video & weather mash-up animation. www.theunseenvideo.com
• Truveo - Ranked video search. www.truveo.com
• Turnhere - Upload & share video (local). www.turnhere.com
• Veoh - Upload & share videos. www.veoh.com
• Videobomb - Submit & vote for video links. videobomb.com
• Videoegg - Capture, edit & publish video. www.videoegg.com
• Vimeo - Upload & share video. www.vimeo.com
• Vsocial - Upload, rank & share video. www.vsocial.com
• Woomu - Submit, vote for & rank videos. www.woomu.com
• Yashi - Upload & share video. www.yashi.com
• Youtube - Upload & share video. www.youtube.com
• Zippyvideos - Upload & share video. www.zippyvideos.com
Part 5 – Multimedia Distribution

Objectives:

By the conclusion of this section of the course, students will...

a. Be able to identify good uses of electronic presentation tools;
b. Create a slide-based and/or non-linear presentation that is rich with digital media;
c. Be able to explain the types of files and data found on the web, and the appropriate uses of each;
d. Create a web site, using a common web authoring tool, which contains various types of digital media;
e. Understand the structure and data types found on a DVD;
f. Burn a DVD using common authoring tools;
g. Post multimedia material to a web-video site;
h. Post multimedia material to a self-created web site
i. Have a functional knowledge of the properties of a podcast and how podcast episodes are created and shared.

Assessment Overview:

Students will complete all lessons and assignments at the discretion of the instructor.
Lesson 5.1 – Slide-based Presentation Tools

The instructor will demonstrate the creation of slide-based presentation software such as PowerPoint, Keynote, Zoho or Google Docs presentations. This lesson will include the following elements:

- Choosing a template/theme
- Entering, editing and formatting text, including hyperlinks
- Inserting and manipulating images
- Inserting and controlling playback of sound
- Inserting and controlling playback of video
- Using animations within slides
- Using transitions between slides
- Saving, exporting and publishing slides
- Modifying existing templates
- Exporting presentations in universal formats

Lesson 5.2 (OPTIONAL) – Non-linear Presentation Tools

The instructor will demonstrate the creation of non-linear presentation tools using web-based software such as Prezi. This presentation should include the same elements as in Part 1. Instructors may also use the example files found on these sites to demonstrate their uses.

Lesson 5.3 – Presentation Techniques and Best Practices

The instructor will demonstrate delivery of a presentation created with one of the tools described in Parts 1 and 2. This lesson should focus on the following elements:

- Connecting the computer to a projector
- Using the software's “presenter view”
- Running a presentation automatically or in “kiosk mode”
- Common pitfalls of presentation such as: design flaws of slides, reading off of the screen, overuse of animation, etc.

Class Activity 5.1 – Pedagogical Applications of Presentation Tools

Students will create a presentation using one of the tools described in Parts 1 and 2. This presentation should focus on content that they would use in their classroom. The presentation will include a clear musical focus/objective. It should contain media artifacts that they have created or downloaded. Students may bring materials from home or their classroom, or may do research on the Internet to gather the content of this presentation. As time permits, students may deliver their presentations to the rest of the class, or they may export the presentation in a universal format to be submitted to the instructor.

The instructor may wish to enforce minimum requirements on this project such as the number of artifacts, the number of slides, and the length of time required to present the slideshow. This will be dependent upon the format of the class and the number of students.
If time allows, the students will present their slideshows to the entire class, or in small groups.

**Lesson 5.4 – Web Delivery Data Structures**

The instructor will demonstrate and show examples of common data structures and files types found on the web. These should include:

- HTML/XHTML
- HTML 5
- Flash
- PDF
- Graphic files (JPEG, GIF, bitmap, etc.)
- Video files
- Sound files

**Lesson 5.5 – File Sizes and Quality Trade-offs**

The instructor will lead a discussion to review the characteristics of several media file types. Considerations of these file types should include ideas of file size, end-user quality, and universality of playback.

**Lesson 5.6 – Common Web Authoring Tools**

The instructor will demonstrate the use of one or more common tools for creation of web pages. These tools may include

- Dreamweaver
- iWeb
- Wix (wix.com)
- Rapidweaver
- Google Sites
- SchoolWires or other school/district licensed services
- Other widely available and frequently used web authoring tools such as WordPress, WikiSpaces, and PBWorks.

For each authoring tool used in class, the instructor should focus on the following:

- Setting up a site
- Page formats and basic page design
- Methods of including media (embedding images, embedding sound and embedding video)
- Methods of establishing links (hypertext, linking within a site, linking to other sites, and linking to media)
- Publishing to a web server
Class Activity 5.2 – Creating an Educational Website

Class members will create a website using one of the tools and the techniques listed above. The site should be focused on teaching a musical concept or skill, and should make use of media that students have prepared earlier in the course. Optionally, this may build on the wiki, blog, or other form of site that students began earlier in the course.

Lesson 5.7 (OPTIONAL) – DVD Data Structures

The instructor will lead a discussion/presentation about the types of files and folder structures used in the creation of DVDs including media types, .vob files, and media folders. The instructor should display the folder/file contents of a commercially produced DVD on a projected screen.

Lesson 5.8 – Creating a DVD from Existing Footage

The instructor will demonstrate creation of a DVD using software such as iDVD or Windows DVD Maker. The demonstration should focus on:

- Importing media
- Selecting a theme/design
- Creating and editing menus and navigation (chapters and markers)
- Burning the DVD

Class Activity 5.3 – Pedagogical Applications of DVD

Students will complete a project demonstrating their ability to burn a DVD.

Lesson 5.9 – Publishing to Web Video Services

The instructor will lead a discussion/presentation about publishing to publically available web video services. These services may include:

- YouTube
- TeacherTube
- SchoolTube
- Vimeo
- Metacafe

For each site demonstrated, the instructor should focus on the characteristics of the site and procedures for uploading video to it. The demonstration should include tasks such as:

- Creating an account
- Creating a playlist
- Creating a channel
- Making a channel secure/private
- Downloading content from these services

The instructor should also discuss the dangers of using copyrighted material, and posting material online that can identify students. Students should investigate and share the policies of their own school districts that govern these uses.
Lesson 5.10 – General Introduction to Podcasts

The instructor will lead a presentation/discussion about the general idea of podcasting. The lesson should feature listening to some popular podcasts and discussion about some of the technical and content elements of those recordings. The podcasts may be either traditional audio podcasts, or video-enhanced podcasts.

Lesson 5.11 – Finding Podcasts

The instructor will lead a presentation/discussion about searching for and locating podcasts using a popular aggregator such as iTunes.

Class Activity 5.4 – Locating and Evaluating Podcasts

Students will use the aggregator software that the teacher demonstrated in Lesson 8.2 to locate a podcast that interests them. Using form located at http://school.discoveryeducation.com/schrockguide/evalpodcast.html, they will evaluate the quality of the podcast they find. This may be done in written form and/or may be shared with the class.

Class Activity 5.5 – Standards

Students will complete the worksheet in Appendix G in which they will relate what they have learned throughout this course to the MENC National Standards. The instructor may also wish to discuss other sets of standards (local, state, ISTE) as they relate to the content of the course.
Appendix A – Music Education Websites for Exploration

* http://www.sfskids.org - Consider this site your premier web destination for learning about music -- that’s why it’s here!
* http://www.dsokids.com - The Dallas Symphony Orchestra’s magical doorway to a world of musical fun and learning for students, parents and teachers!
* http://www.nyphilkids.org - The New York Philharmonic Kidzone is a place for kids to come and learn about the New York Philharmonic and about the instruments, music, musicians, and more.
* Usborne Virtual Keyboard - A virtual keyboard that can be used in class.
* Music Theory Puzzles - A variety of puzzles. I showed the mistakes puzzle.
* Smithsonian Folkways (formerly Smithsonian Global Sounds) - Music of the people, by the people, for the people.
* www.creatingmusic.com - Morton Subotnick’s website for young students
* Math and Music - Online music and math applications
* http://musictheory.net - Ricci Adams’ site for all things music theory
* http://www.emusictheory.com/interact.html - Music theory concepts to explore
* http://www.classicalarchives.com/ - Classical Music Archives
* http://www.noteflight.com - noteflight is a free notation program where you compose on the website
* http://www.musicalintervalstutor.info/ - The Musical Intervals Tutor is a study aid to help you learn the sounds of the basic music intervals from minor second to perfect octave.
* http://www.artopod.com/groovelab/ - groove lab drum machine
* http://www.classicsforkids.com/ - Classical music's great composers come to life through music and stories.
* Carnegie Hall Listening Adventures: - Learn about sound, music notation, text, and instruments of the orchestra through a series of interactive games.
* http://www.tvokids.com/games - Make your own music is one of its many musical games
* http://www.philtulga.com/resources.html - If you're interested in connecting music to other areas of the curriculum, this page is for you! It contains links to all of my free arts integration resources, multimedia activities, and homemade instrument projects. Enjoy!
* http://www.vicfirth.com/education/rudiments.php - 40 essential drum rudiments
* http://www.themusicinteractive.com - Welcome to The Music Interactive web site, a place for music games, activities, and Computer Aided Instruction software for your students.
* http://earth.google.com/ - Google Earth lets you fly anywhere on Earth to view satellite imagery, maps, terrain, 3D buildings, from galaxies in outer space to the canyons of the ocean. You can explore rich geographical content, save your tour.
* MmmTssss - Mmmssss is free software for playful looping. To be honest, it's an excuse to make mouth noises. Just have fun and make music together!
* http://www.musictechteacher.com/ - My 2nd through 5th grade students are learning to read, write, compose and publish their music to CD's and the Internet. Student work, pictures and music compositions are on this site. The site is also used to provide music technology links, quizzes, resources and information to all music teachers interested in using technology to enhance music instruction.
* http://www.jeopardylabs.com - edit jeopardy games
* http://elementaryinstrumental.wikispaces.com/ - Dr. Scott Watson's Home Practice Online on a wikispace!
* http://shafermusic.wikispaces.com - Hank Wajda's wiki for his general music students
* http://musescore.org/ - free notation program
* http://www.k-12.org - Valuable resources for music educators students of all areas and educational levels. Regularly updated.
* http://www.shnubis.com/ - This webpage is to help you explore your own musical talents and ability.
* http://www.bbc.co.uk/northernireland/schools/4_11/music/mm/index.shtml - Interactive Musical Mysteries
* http://www.jamstudio.com - Creating music software
* http://www.therhythmtrainer.com - An easy site for practicing rhythms, created by a middle school teacher in Illinois.
Appendix B – Websites of Professional Organizations

* http://www.ti-me.org - Technology for Music Education (this is mandatory)
* http://atmionline.org - Association for Technology in Music Instruction
* http://www.iste.org - International Society for Technology in Education
* http://www.asbda.com - American School Band Directors Association (ASBDA)
* http://www.atstaweb.com - American String Association (ASTA)
* http://www.giml.org - Gordon Institute for Music Learning (GIML)
* http://suzukiassociation.org - Suzuki Institute
* http://societymusictheory.org - Society for Music Theory
* http://www.ams-net.org - American Musical Logical Association
* http://www.music.org - The College Music Society
* http://www.musicpln.org - Music Professional Learning Network: This site is a freely available public site that is designed specifically for Music Teachers and pre-service Music Teachers interested in continual professional development in their field of music education.
* http://www.menc.org - Since 1907, MENC has worked to ensure that every student has access to a well-balanced, comprehensive, and high-quality program of music instruction taught by qualified teachers. MENC's activities and resources have been largely responsible for the establishment of music education as a profession, for the promotion and guidance of music study as an integral part of the school curriculum, and for the development of the National Standards for Arts Education. MENC is located at the National Center for Music Education in Reston, VA.
* http://www.acda.com - American Choral Directors Association
* http://www.aosa.org - American Orff-Schulwerk Association
* https://oake.org - Organization of American Kodály Educators
Appendix C – Software and Website Evaluation Forms

#1) Technology-Assisted Learning Student Worksheet

For each category of software circle the phrase or term which most applies. Rank in priority order the terms if more than one applies. 1 = most common or greatest priority.

**DRILL AND PRACTICE SOFTWARE**

<table>
<thead>
<tr>
<th>KNOWLEDGE:</th>
<th>Teaches New Knowledge</th>
<th>Reinforces Existing Knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td>PREREQUISITE LEARNING:</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>STRUCTURE:</td>
<td>Structured</td>
<td>Random</td>
</tr>
<tr>
<td>RECORD KEEPING/SCORING:</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

**TUTORIAL**

<table>
<thead>
<tr>
<th>KNOWLEDGE:</th>
<th>Teaches New Knowledge</th>
<th>Reinforces Existing Knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td>PREREQUISITE LEARNING:</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>STRUCTURE:</td>
<td>Structured</td>
<td>Random</td>
</tr>
<tr>
<td>RECORD KEEPING/SCORING:</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

**GAMES**

<table>
<thead>
<tr>
<th>KNOWLEDGE:</th>
<th>Teaches New Knowledge</th>
<th>Reinforces Existing Knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td>PREREQUISITE LEARNING:</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>STRUCTURE:</td>
<td>Structured</td>
<td>Random</td>
</tr>
<tr>
<td>RECORD KEEPING/SCORING:</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

**UNIQUE FEATURES**
<table>
<thead>
<tr>
<th>DISCOVERY/SIMULATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>KNOWLEDGE:</td>
</tr>
<tr>
<td>Teaches New Knowledge</td>
</tr>
<tr>
<td>Reinforces Existing Knowledge</td>
</tr>
<tr>
<td>PREREQUISITE LEARNING: Yes No</td>
</tr>
<tr>
<td>STRUCTURE:</td>
</tr>
<tr>
<td>Structured Random Student Controlled</td>
</tr>
<tr>
<td>RECORD KEEPING/SCORING: Yes No</td>
</tr>
<tr>
<td>UNIQUE FEATURES</td>
</tr>
</tbody>
</table>
#2) Evaluating Technology-Assisted Learning

1. CITATION AND GENERAL INFORMATION

Title:
Author:
Publisher:
Date:
Content:
Grade/Age:
Class:

Target audience (Elementary, Instrumental, Choral, Theory, etc.):

Hardware compatibility:

Peripherals required/preferred:

2. INSTRUCTIONAL CONTENT

   Specific Musical Content:

   Educational Objectives:

Program Structure:

   Student Directed Linear
   Student Directed Non-linear/random
   Software Directed
Instructional Mode: (Circle the appropriate response(s))

- Drill and Practice
- Tutorial
- Game
- Discovery/Simulation
- Performance

Sequence of Materials:

Excellent    Good    OK    Fair    Poor

Pace of Instruction:

Excellent    Good    OK    Fair    Poor

Quality of Interaction:

Excellent    Good    OK    Fair    Poor

3. Record Keeping

- Hall of Fame: Yes    No
- Student Records: Yes    No

4. Cost

- Single copy
- Multi-copy packs (if available)
- Site license (if available)

5. Standards – Which standards can be addressed using this software? (Circle all that apply.)

1. Singing, alone and with others, a varied repertoire of music.
2. Performing on instruments, alone and with others, a varied repertoire of music.
3. Improvising melodies, harmonies, and accompaniments.
5. Reading and notating music.
6. Listening to, analyzing and describing music.
7. Evaluating music and music performances.
8. Understanding relationships between music, the other arts, and disciplines outside the arts.
9. Understanding Music in Relation to History and Culture.

6. OVERALL EVALUATION
Appendix D – Web-based Lesson Plan

Students may use this form or an equivalent form appropriate for their district/school.

Lesson/unit title:

Setting/Grade level:

Time needed for lesson:

Long-term unit goals:

Lesson Objectives:

Materials and resources (including websites) needed:

Additional technology considerations (lab/single computer, presentation tools, network resources, etc.):

Procedures (add rows if necessary):

<table>
<thead>
<tr>
<th>Time</th>
<th>Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Method of assessment/evaluation:

Standards addressed through this lesson/unit:
Appendix E - Internet Scavenger Hunt Activity Sheet

Use a search engine to locate the following information. Write your answers below, or bookmark the sites and save or print the bookmark list.

Research a composer:

Student Name:

Composer Selected:

A. Address of Painting or Photograph:
   Address of Painting or Photograph:
   Address of Painting or Photograph:

B. URL of Biography
   Dates of Composer:

C. General Significance of Composer:

D. Significant Composition 1:
   URL of Sound Excerpt:
   Significant Composition 2:
   URL of Sound Excerpts:
   Significant Composition 3:
   URL of Sound Excerpts:

Research your instrument:

Find the following:

   A site devoted to a specific musical instrument

   URL:
A site devoted to the history of that instrument
URL:

A repertoire list for that instrument
URL:

A site containing information on a famous performer of that instrument
URL:

A site about a professional organization for that instrument
URL:
## Appendix F - Data Types on the Internet

### PICTURES

<table>
<thead>
<tr>
<th>Format (Extension)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GIF (.gif)</td>
<td>Graphic Interchange Format - Originally developed by CompuServe, usually limited to 256 colors, can contain multiple frames (animations – no sound). This is the best format for cartoons, logos, notation, etc.</td>
</tr>
<tr>
<td>JPEG (.jpg, .jpeg)</td>
<td>This format was created by the Joint Photographic Experts Group, a group of professional photographers. Pictures may contain thousands of colors. This format allows the greatest compression (reduction in file size). JPG is a &quot;lossy&quot; format. This means the original image may lose some detail upon compression. This is usually, but not always, undetectable by the human eye. Decompression of large pictures in JPEG format is noticeably slower than GIFs on slower computers. This is the best format for pictures.</td>
</tr>
<tr>
<td>PNG (.png)</td>
<td>Portable Network Graphic – a graphic file format</td>
</tr>
</tbody>
</table>

### SOUNDS

<table>
<thead>
<tr>
<th>Format (Extension)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WAVE (.wav)</td>
<td>This format was originally created by Microsoft. It allows for a number of sampling rates and is adequate for most purposes. Caution should be taken about posting .wav files on the Internet, or trying to transfer them, because they are uncompressed audio and can be large files.</td>
</tr>
<tr>
<td>AIFF (.aif, .aiff)</td>
<td>This format was originally created by Apple. It contains a wide variety of options for compressing and sampling sounds, but is not a common sound format on the Internet. Caution should be taken about posting AIFF files on the Internet, or trying to transfer them, because they are uncompressed audio and can be large files.</td>
</tr>
<tr>
<td>REAL (.rm, .ra, .ram)</td>
<td>RM stands for Real Media and may contain both audio and video. These files are designed to be played in RealNetworks' RealPlayer. The audio files are frequently compressed to one tenth of the size of an uncompressed files. The loss of quality, however, is not as dramatic as in previous compression schemes. RealNetworks also offers a streaming server whereby live or pre-recorded concerts, lectures, or radio programs may be presented.</td>
</tr>
<tr>
<td>MPEG Layer 3 (.mp3)</td>
<td>MP3 uses psychoacoustic compression schemes to remove parts of the sound that the human ear really does not hear anyway. This compression process shrinks the original sound data from a CD</td>
</tr>
</tbody>
</table>
by a factor of about 10:1 without drastic changes in sound quality. Because of their small size, it is very popular for MP3s to be traded across the Internet. Protected versions of MP3 files are sold through popular online music sources such as iTunes.

<table>
<thead>
<tr>
<th>QuickTime (.mov)</th>
<th>This file frequently contains only sound but may include video (see Movies below).</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAC (.aac)</td>
<td>Advanced Audio Coded – similar to MP3, can be copy protected. Many sound files downloaded from Apple’s iTunes are formatted as AAC.</td>
</tr>
</tbody>
</table>

**TEXT**

| Text (.txt) | A standard text file. These can be opened in most word processing applications, but contain little information about formatting or styles. Text files are also useful as files for developing websites. |
| Rich Text (.rtf) | Rich text files are similar to .txt files, but contain additional information about formatting and text style. This is helpful for maintaining the look of a document across several applications. |
| PDF (.pdf) | Portable document format. This document is common because it preserves exact formatting instructions (font sizes, styles, page breaks, tabs, and margins). PDF documents look exactly the same as the original, no matter what computer (Windows, Macintosh) was used to create them, and no matter what fonts are installed in the viewer’s computer. These files may also contain graphics and links to other areas of text. PDF documents are often associated with Adobe Acrobat, but can be viewed and often created in other applications. |
| Word Document (.doc) | .doc documents are created using Microsoft Word. These files do not display in the browser window but may be downloaded and viewed with Microsoft Word. Posting .doc files on the web is discouraged because, unless you take steps to protect them, .doc files are editable using Word. |

**MOVIES**

<p>| QuickTime (.mov) | This format is the most flexible and common video format on the Internet. This movie format was originally developed by Apple. It requires that QuickTime be installed in the viewer’s computer. QuickTime is a free download from Apple at <a href="http://www.apple.com/quicktime/">http://www.apple.com/quicktime/</a>. |</p>
<table>
<thead>
<tr>
<th>Format</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVI (.avi)</td>
<td>This format was developed by Microsoft. It requires software compression and expansion tools to be installed into the operating system. Its mass-market appeal has diminished because of its large data size, but AVI is still popular among high end video users.</td>
</tr>
<tr>
<td>Windows Media (.wmv)</td>
<td>This format is usually associated with Windows computers, and is the format often used in Windows programs such as Windows Movie Maker.</td>
</tr>
<tr>
<td><strong>MIDI FILES</strong></td>
<td></td>
</tr>
<tr>
<td>MIDI (.mid, .smf)</td>
<td>MIDI files (or SMF for Standard MIDI File) contain messages that trigger internal or external synthesizers. This format may be downloaded and played in any music notation or sequencing program. Most modern browsers also support playback of MIDI files using the internal sound capabilities of the computer.</td>
</tr>
<tr>
<td><strong>PROGRAMMING/INTERACTIVITY</strong></td>
<td></td>
</tr>
<tr>
<td>.class</td>
<td>A Java file. This format actually contains a compiled program which is executed by the browser being used to view it. These programs run on any platform as long as the browser being used supports JAVA programs.</td>
</tr>
<tr>
<td>.js</td>
<td>A JavaScript file. JavaScript is a language used to add interactivity to web pages. JavaScript programs may be embedded in web pages or may be saved in external .js files. JavaScript is also a cross-platform language.</td>
</tr>
<tr>
<td>.swf</td>
<td>Shockwave Flash files. These files may also contain computer programs. Shockwave files are typically used to add animation or interactivity to free-standing applications or websites. Flash files are usable in Windows and Macintosh systems, but not in some mobile devices.</td>
</tr>
<tr>
<td><strong>Compressed File Formats</strong></td>
<td></td>
</tr>
<tr>
<td>ZIP (.zip)</td>
<td>A compressed file, usually created with a utility such as WinZip, or with an OS function on a Mac.</td>
</tr>
<tr>
<td>SIT (.sit)</td>
<td>A compressed file created with Stufflt or a program in the same family (DropStuff). These files are cross platform and may be created or used on Macintosh or Windows computers.</td>
</tr>
</tbody>
</table>
**Appendix G – Standards Worksheet**

1. Which MENC national standard(s) can be addressed using technology-assisted learning software? Explain specific ways technology-assisted learning software can be used to address these standards. (The standards are listed below.)

<table>
<thead>
<tr>
<th>Standard #</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Which MENC national standard(s) can be addressed using multimedia development? Explain specific ways multimedia tools can be used to address these standards. (The standards are listed below.)

<table>
<thead>
<tr>
<th>Standard #</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

41
MENC Standards:

1. Singing, alone and with others, a varied repertoire of music.
2. Performing on instruments, alone and with others, a varied repertoire of music.
3. Improvising melodies, harmonies, and accompaniments.
5. Reading and notating music.
6. Listening to, analyzing and describing music.
7. Evaluating music and music performances.
8. Understanding relationships between music, the other arts, and disciplines outside the arts.
9. Understanding Music in Relation to History and Culture.