Music Technology
Music Technology I & II

2021-2022

Aligned with Ohio's Learning Standards
for Fine Arts: Music 2021

Department of Academic Services
Office of Teaching and Learning
Curriculum Division

COLUMBUS CITY SCHOOLS

Curriculum Map

Year-at-a-Glance
The Year-at-a-Glance provides a high-level overview of the course by grading period, including: ● Units; ● Lessons; and ● Timeframes.

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Scope and Sequence
The Scope and Sequence provides a detailed overview of each grading period, including: ● Units; ● Standards/Learning Targets; ● Timeframes; ● Big Ideas and Essential Questions; and ● Strategies and Activities.

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Curriculum and Instruction Guide
The Curriculum and Instruction Guide provides direction for standards-based instruction, including: ● Unpacked Standards / Clear Learning Targets; ● Content Elaborations; ● Sample Assessments; ● Instructional Strategies; and ● Instructional Resources.

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Year-at-a-Glance

Semester X- Music Technology 1

Grading Period 1	Unit 1- Intro to Music Technology	1 week	Unit 2- Audio: Importing, recording and editing audio within a DAW	2 Weeks	Unit 3- MIDI: Importing, recording, and editing MIDI within a DAW	3 Weeks	Unit 4- Digital Signal Processing and Quarter Wrap-up: EQ, reverb, delay, and final project	3 Weeks
	Lesson 1.1 Intro to Music Technology- Students learn about course expectations, set up software and account registrations, and become accustomed to electronic communications and the software GUI.		Lesson 2.1 Audio Import & Editing- Students learn how to import and edit premade audio music loops in a DAW, as well as learning to balance and pan tracks. Lesson 2.2 Audio Recording- Students learn how to record audio with a device, such as a computer, phone, or other system, then import that recording into a DAW for editing.		Lesson 3.1 MIDI Recording & Editing- Students learn how to record and edit MIDI tracks in a DAW. Lesson 3.2 MIDI Import and Software Instrument Parameters- Students learn how to import MIDI tracks into a DAW and assign and customize software instruments to play those tracks. Lesson 3.3 Culminating Project- Students complete a large project encompassing the skills gained above.		Lesson 4.1 DSP: EQ, Reverb, and Delay- Students learn how to apply EQ, reverb, and delay to audio and MIDI. Lesson 4.2 Final Project- Final project incorporating all the elements of the previous lessons.	

Grading Period 2	Unit 5- Intro to Post Production (Audio for Video)	1 week	Unit 6- Sound Effects: implementing sound effects using libraries and Foley	2 Weeks	Unit 7- Dialogue: recording on location and ADR	3 Weeks	Unit 8- Digital Signal Processing and Quarter Wrap-Up: compression, limiting, and metering	3 Weeks

| Lesson 5.1 Intro to Post-Production (Audio for Video)- Students learn about the relationship between audio and video, with a focus on music and synchronization. | Lesson 6.1 Sound Effects Libraries- Students learn how to access and use sound effects from existing libraries.

Lesson 6.2 Foley Effects- Students learn how to create sound effects using Foley techniques. | Lesson 7.1 Location Sound- Students learn how to record dialogue in the field with proper mic placement, technique, and workflow.

Lesson 7.2 ADR- Students learn how to re-record dialogue over existing video.

Lesson 7.3 Culminating Project- Students complete a large project encompassing the skills gained above. | Lesson 8.1 DSP: Compression & Limiting; Metering- Students learn how to apply compression, and limiting to a project, as well as the importance of metering audio levels.

Lesson 8.2 Final Project- Final project incorporating all the elements of the previous lessons. |

Semester Y- Music Technology II

	Unit 9- Music Production Review	2 weeks	Unit 10- Mixing	2 Weeks	Unit 11- Multitrack Recording	2 Weeks	Unit 12- Sweetening and Final Project	3 Weeks
Grading Period 3	Lesson 9.1 Review Audio Operations- Students review how to record, import and edit audio. Lesson 9.2 Review MIDI Operations- Students review how to record, import and edit MIDI. Lesson 9.3 Review DSP- Students review how to apply DSP effects to a project.		Lesson 10.1 Mix Overview and Organization- Students learn about the overall process of mixing and how to organize a project for mixing. Lesson 10.2 Small Mix- Students mix a small project (5-7 tracks). Lesson 10.3 Large Mix- Students mix a large project (10 or more tracks).		Lesson 11.1 Microphones Properties- Students learn about mic types, frequency response curves, and polar patterns. Lesson 11.2 Mic Choice and Placement- Students learn how to choose mics for different sound sources (e.g. voice, kick drum, piano, etc.) and where to place mics for optimal recorded sound. Lesson 11.3 Recording Session Workflow- Students learn how to conduct a productive recording session.		Lesson 12.1 Sweetening- Students learn how to add electronic sounds and effects to a mix Lesson 12.2 Final Project- Final project incorporating all the elements of the previous lessons.	

Grading Period 4	Unit 13- Post Production Review	2 weeks	Unit 14- Scoring to Picture	2 Weeks	Unit 15- Basic Video Workflow	2 Weeks	Unit 16- Music Video Workflow and Final Project	3 Weeks
	Lesson 13.1 Review Sound effects- Students review how to use sound libraries and Foley for sound effects. Lesson 13.2 Review Dialogue Recording- Students review how to record dialogue on location and with ADR.		Lesson 14.2 Music and Mood- Students learn how music enhances or disrupts the mood of a video or film. Lesson 14.3 Original Score- Students learn how to compose an original score for a video or film using loops, software instruments, and acoustic sources.		Lesson 15.1 Video Recording Setup- Students learn how to set up a basic video shoot using proper lighting, framing, and camera placement. Lesson 15.2 Audio Sync- Students learn how to synchronize multiple audio sources and microphones to picture during a video shoot. Lesson 15.3 Video Editing- Students learn how to edit video and audio from multiple sources into a final product.		Lesson 16.1- Music Video Workflow- Students learn how to shoot a basic music video using multiple takes, studio recordings, and on-location sound. Lesson 16.2 Final Project- Final project incorporating all the elements of the previous lessons.	

Scope and Sequence

Grading Period 1	Unit 1- Intro to Music Technology			1 week
	Lesson	**Content Statements**	**Big Ideas / Essential Questions**	**Strategies / Activities**
	Lesson 1.1 Intro to Music Technology	HSP.4RE Identify elements of style and form regularly used in significant music compositions.	**Inculcation** ● What are the class norms, expectations, policies, and procedures? ● What are the basic features of each piece of software or DAW? ● How is music produced today?	● Syllabus ● Computer operations and customization ● Class communications ● Account logins ● Icebreakers ● Activity- guided listening
	Unit 2- Audio			**2 weeks**
	Lesson 2.1 Audio Import & Editing	HSAC.2PE Incorporate technology and media arts in creating, composing and arranging music.	**Develop Craft** ● How does one import and edit audio? ● How does one balance and pan audio? ● What is the stereo field? **Express** ● How can one compose through creative audio editing? ● How does one achieve a wide, balanced track?	● Demo- audio import and editing ● Demo- balance and panning ● Workshop- composing with loops ● Demo- simple mixing (balance and panning) ● Project- Loop Composition Part 1
	Lesson 2.2 Audio Recording	HSAC.2PE Incorporate technology and media arts in creating, composing and arranging music.	**Develop Craft** ● How can one record with a variety of devices: computer, cell phone, interface, field recorder,	● Demo- recording voices with a cell phone (or other device), including

			etc.? ● How does one import recorded audio into a DAW? **Engage and Persist** ● What is important to the student and/or the community? ● How is editing used to refine and clarify a topic?	placement, signal level, and choice of location ● Demo- exporting recordings from phone via email and importing to DAW. ● Workshop- preparing and conducting an interview ● Project- Interview
Unit 3- MIDI				**3 weeks**
	Lesson 3.1 MIDI Recording & Editing	HSAC.2PE Incorporate technology and media arts in creating, composing and arranging music.	**Develop Craft** ● What is MIDI? ● How is MIDI created and edited in a DAW? **Express** ● What are some typical elements of music composition (form, repetition, variation, etc.)? ● How can MIDI clips be reused and varied to generate a more interesting composition?	● Explainer- MIDI is data ● Demo- loading a software instrument ● Demo- two ways to sequence and edit MIDI notes (recording and drawing) ● Workshop- composing simple drum parts, bass lines, chords, and melodies with MIDI ● Project- Loop Composition Part 2
	Lesson 3.2 MIDI Import and Software Instrument Parameters	HSAC.2PE Incorporate technology and media arts in creating, composing and arranging music.	**Develop Craft** ● How can one import existing MIDI files into a DAW? ● How can one manipulate the parameters of software instruments? **Express** ● How can one choose appropriate	● Demo- finding and importing MIDI files ● Explainer- two types of MIDI files ● Demo- software instrument parameters ● Workshop- orchestration ● Project- MIDI

			software instruments to play existing MIDI clips? ● How can one create original, custom sounds with software instruments?	Orchestration Project ● Alt. Project- Create a Custom Instrument Preset
	Lesson 3.3 Culminating Project	HSAC.2PE Incorporate technology and media arts in creating, composing and arranging music.	**Express** ● How can one compose a piece using both audio and MIDI?	● Project- Make a Beat
Unit 4- DSP				**3 weeks**
	Lesson 4.1 DSP: EQ, Reverb, and Delay	HSAC.2PE Incorporate technology and media arts in creating, composing and arranging music.	**Develop Craft** ● What is digital signal processing? ● What are the parameters of EQ, reverb, and delay? ● How should one implement EQ, reverb, and delay? **Express** ● How can one use DSP to enhance a composition or project?	● Demo- EQ ● Explainer- frequency bands ● Demo- Reverb ● Demo- Delay ● Workshop- applying DSP effectively ● Project- Applying DSP
	Lesson 4.2 Final Project	HSAC.2PE Incorporate technology and media arts in creating, composing and arranging music.	**Stretch and Explore** ● How can one use audio, MIDI, and DSP to create an original work or composition? ● How can one create something that is personally meaningful?	● Project- Create an Ambient Soundscape

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Unit 5- Intro to Post-Production			1 week
Lesson	**Content Statements**	**Big Ideas / Essential Questions**	**Strategies / Activities**
Lesson 5.1 Intro to Post-Production	HSAC.2RE Analyze how multiple media artworks combine style and content to create an effective multisensory audience experience.	**Observe** ● What is post-production? ● What are the elements of post-production? ● How is post-production similar to and different from simple audio production? **Develop Craft** ● How can one use video editing software to edit video? ● How is video editing similar to audio editing?	● Explainer- post-production ● Demo- simple video editing ● Explainer- how to export video properly ● Activity- guided viewing
Unit 6- Sound Effects			**2 weeks**
Lesson 6.1 Sound Effects Libraries	HSAC.2PE Incorporate technology and media arts in creating, composing and arranging music.	**Develop Craft** ● What is the role of sound effects in post? ● How can one find and use sound effects libraries? **Express** ● How can one use editing techniques and DSP to create custom sound effects?	● Explainer- types and sources of sound effects ● Demo- searching for, acquiring, and organizing sound effects. ● Workshop- enhancing sound effects through creative editing and DSP ● Project- Compile a Custom Effects Library

Grading Period 2

	Lesson 6.2 Foley Effects	HSP.2CR Combine production processes to demonstrate deliberate choices in organizing and integrating content in media art productions.	**Develop Craft** ● What is Foley? ● How are Foley sounds created? **Express** ● How can one use recording techniques to record Foley? ● What are some items and surfaces suitable for creating Foley sounds? ● How can Foley sounds be edited for further customization?	● Explainer- history and practice of Foley sound effects ● Demo- recording Foley sounds ● Workshop- editing and manipulating Foley sounds with DSP ● Project- Compile a Custom Library of Foley Sounds
Unit 7- Dialogue			**3 weeks**
	Lesson 7.1 Location Sound	HSP.2CR Combine production processes to demonstrate deliberate choices in organizing and integrating content in media art productions.	**Develop Craft** ● What is location sound? ● What is dialogue? ● What is the difference between diegetic and non-diegetic sound? ● How can one shoot video with a cell phone effectively? **Express** ● What are some considerations for recording on location? ● How can one use DSP to enhance location sound?	● Explainer- location sound, dialogue, and diegetic vs non-diegetic sound ● Demo- shooting and recording on location ● Workshop- choosing spaces and using mic techniques to maximize recording quality on location ● Project- Short Video
	Lesson 7.2 ADR	HSP.2CR Combine production processes to demonstrate deliberate choices in organizing and integrating content in media art productions.	**Develop Craft** ● What is automatic dialogue replacement (ADR)? ● When is ADR necessary in a production? **Express**	● Explainer- what is ADR and when is it necessary? ● Demo- recording ADR ● Workshop- acting for ADR ● Project- Bad Lip

		• What is an effective ADR workflow? • How does the quality of an actor affect the success of an ADR session?	Reading
Lesson 7.3 Culminating Project	HSAD.2CR Synthesize content, processes and assembly components to express compelling purpose, story, emotion or ideas in complex media art productions.	**Express** • How can one combine effects, dialogue, and music to create a convincing soundtrack?	• Project- Commercial Project

• **Unit 8- DSP**		•	**3 weeks**
Lesson 8.1 DSP: Compression and Limiting	HSAD.2CR Synthesize content, processes and assembly components to express compelling purpose, story, emotion or ideas in complex media art productions.	**Develop Craft** • What is dynamic range? • What are compression and limiting? **Express** • How can one use compression and limiting to control the dynamics of a production effectively?	• Explainer- dynamic range, compression and limiting • Demo- compressor and limiter controls and parameters • Workshop- applying compression and limiting effectively • Project- Applying DSP
Lesson 8.2 Final Project	HSAD.2CR Synthesize content, processes and assembly components to express compelling purpose, story, emotion or ideas in complex media art productions.	**Stretch and Explore** • How can one use effects libraries, Foley sound, location sound, ADR, music, and DSP to create a compelling and realistic soundtrack for a video? • How can one change the mood and tone of a video by applying different effects, dialogue, and music?	• Project- Audio for Video Project

	Unit #			# weeks
	Lesson	**Content Statements**	**Big Ideas / Essential Questions**	**Strategies / Activities**
Grading Period 3		•		•

		•		•		•

	Unit #			**# weeks**
	Lesson	**Content Statements**	**Big Ideas / Essential Questions**	**Strategies / Activities**

Grading Period 4	•	•	•
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Curriculum and Instruction Guide

Unit 1- Intro to Music Technology

<table><tr><td style="background-color:#c8102e;color:white">Unpacked Standards / Clear Content Statement</td></tr></table>

Content Statement #	Essential Understanding	Academic Vocabulary
Content Statement # HSP.4RE Identify elements of style and form regularly used in significant music compositions.	**Essential Understanding** Class norms and procedures Software graphical user interface (GUI) **Extended Understanding** How creators use DAWs to create music.	**Academic Vocabulary** GUI DAW Production Beat Hook Groove Lead Bassline Pad

Artistic Process Type(s): Responding	**Broad Content Statement:** − Students can successfully navigate the norms and technology of the classroom. **Underpinning Knowledge Content Statements:** − The student can understand how to access and use classroom technology. − The student can understand how to communicate with the teacher and one another. − The student can understand that music is often created with software. **Underpinning Skills Content Statements:** − The student can use a computer. − The student can hear and describe music in broad terms. **Underpinning Reasoning Content Statements:** − The student can understanding the concept of a DAW − The student can listen to music "like a producer".

Prior Grade Related Content Statement # NA	Future Grade Related Content Statement # NA

Content Elaborations

Because of the novelty of music technology classes, it is recommended that the focus of the first week be on establishing a set of norms and classroom workflow. This includes procedures for how to interact with the software and equipment and how students should communicate with the teacher and one another. An overview of the basic layout of whatever software is being used is also recommended in the first week.

Another challenge in designing a music technology curriculum is that different schools may provide different software and equipment. This course is written for use with minimal resources, such as student cell phones and Chromebooks. At the time of the writing CCS is providing Soundtrap as a DAW for secondary music classes. WeVideo is an online video editor with a limited free edition that is compatible with phones and Chromebooks. If you have more robust resources at your disposal, the material in this course can be scaled up to be as complex as needed.

Popular genres of music are the natural milieu of a music technology course. While listening to and analyzing popular music uses the same skills as that of "classical" music, the vocabulary is a bit different. To get students thinking like a producer, you should use the popular music vocabulary, as it is more "correct" in this setting.
- Beat- a whole song, just the instrumental part of a song, the primary groove of a song, or all of the above
- Hook- any memorable portion or fragment of a song; in Hip Hop, the chorus is often called the hook
- Groove- the rhythmic style of the song; it comprises the instruments and rhythms used, as well as various levels of swing or shuffle (sometimes called the "feel")
- Lead- the primary melody; also a category of synthesizer usually used to play melodies
- Bassline- the lowest part of a song, it may be played by a bass, keyboard, synth, or a tuned kick drum, such as an 808-kick
- Pad- the background parts of a song that provide the inner harmonic voices; can be static (held out with long notes) or moving (in a rhythmic or arpeggiated fashion)

Instructional Strategies

Walk students through the procedures for entering the classroom, setting up or accessing equipment, and logging into necessary websites one step at a time. Make sure each student completes the current step before moving on to the next step.

Have them practice going through the steps a few times and troubleshoot any problems or misunderstandings.

Have your playlist of songs to analyze set up ahead of time. Don't try to search "on the fly."

Make sure you have a playback system that can play a wide frequency range (at least 50hz-16kHz) and is loud enough for the students to hear clearly. In this course, the quality of sound is paramount!

Sample Assessments and Performance Tasks

If you need to have something to grade during the first week, have students listen to a song out loud as a class, then analyze it however they can and write their observations down on paper or electronically. Make this a participation grade and stress that it is just a preliminary activity.

Instructional Resources

Soundtrap resources
https://edu.soundtrap.com/curricula-resources-that-implement-soundtrap/
https://edu.soundtrap.com/teacher-resources/

Article on active listening
https://blog.landr.com/active-listening-skill-producers/

Unit 2- Audio, Lesson 2.1- Audio Import and Editing

Unpacked Standards / Clear Content Statement

Content Statement #	Essential Understanding	Academic Vocabulary
HSAC.2PE Incorporate technology and media arts in creating, composing and arranging music.	Importing and editing audio Balancing and panning tracks The stereo field **Extended Understanding** Composing with creative audio editing Creating a wide, well-balance mix	Import Clip Select Trim Fader Pan knob Stereo field Mix

Artistic Process Type(s): Performing	**Broad Content Statement:** − The student can import and edit audio. − The student can balance and pan tracks across the stereo field. **Underpinning Knowledge Content Statements:** − The student knows how to import audio. − The student understands the concept of the stereo field. **Underpinning Skills Content Statements:** − The student can select, move, trim and fade audio. − The student can adjust volume faders and pan knobs to create a wide, well-balanced mix. **Underpinning Reasoning Content Statements:** − The student can create an original composition through creative audio editing − The student can compose music that is personally meaningful.

Prior Grade Related Content Statement # NA	Future Grade Related Content Statement # NA

Content Elaborations

In this lesson, students learn how to import and edit audio. Most DAWs come with a built-in library of audio loops and "one-shots" (single drum hits, shouts, or other sounds used in a sample player). Depending on the DAW you use, you may or may not have to address the issues of key, tonality, and transposition. These topics are fairly easy to explain, as most loops include key information in their names and transposition can be achieved by simply turning a knob. Encourage the student to use their ears when finding and combining loops.

The stereo field is the location of sound to the left and right of one's head, roughly 180° wide. Most DAWs have some kind of pan control to place tracks in a particular spot in the stereo field. This is a fundamental aspect of music production.

Composing with premade loops allows students the freedom to explore placement, creative editing, musical form, texture, and arranging without the burden of having to compose the actual music.

Instructional Strategies

You should have a teacher-created example ready for the students before you begin this lesson. As students turn in projects, make sure to save the exemplary ones in a special folder to use as additional examples in later course iterations. If you are adept at this project, you can also do live demonstrations and make the project in real time in front of the students.

A good practice is to listen to a popular song and identify the elements that relate to the current project. Discuss these elements with the class. Then do a demonstration of each element, one step at a time. In between each step, give students plenty of time to practice that skill. As they practice individually, walk around the room, listening to and looking at their progress. This is an effective way to do formative assessments and to help keep students on track.

Sample Assessments and Performance Tasks

Ongoing, informal formative assessments through listening to and watching student projects.

Here is a sample Loop Composition Project using Soundtrap

1. Project- Loop Composition in Soundtrap
2. Create a new Soundtrap project. Name it "Loop_Composition_YOUR_NAME."
3. Choose a tempo.
4. Open the loop browser and audition many loops.

5. Ensure that the loops you use are compatible harmonically!
6. Choose at least 5 loops and arrange them into a piece that has a beginning, middle, and end. You may use more loops if you wish.
7. Your piece should be at least 32 bars in length.
    a. Layer your loops creatively and avoid the "stair-step" beat.
    b. Try putting all of your chosen loops together and then subtracting elements to create a musical form.
8. Use the track volume controls to balance the audio levels of each track.
9. Use track pan controls to place tracks in the stereo field.
10. Use the "Share" feature to turn in your Soundtrap project.

Be sure to take time to clearly explain and demonstrate proper file naming and sharing. Have students practice and be lenient with them for the first couple of projects. Turning in electronic work is harder than you think it is.

Instructional Resources

An article on loop compositions
https://www.sweetwater.com/insync/5-tips-better-loop-based-music/

An article on the ethics of using premade loops
http://composerfocus.com/your-view-is-using-loops-cheating/

Unit 2- Audio, Lesson 2.2- Audio Recording

Unpacked Standards / Clear Content Statement		
Content Statement # HSAC.2PE Incorporate technology and media arts in creating, composing and arranging music.	**Essential Understanding** Audio recording techniques Mic placement Exporting recordings **Extended Understanding** Interview techniques Editing for content	**Academic Vocabulary** Field recording Microphone Export

Artistic Process Type(s): Performing	**Broad Content Statement:** − The student can record audio with a cell phone or other device. − The student can export recordings from their device for use in a DAW **Underpinning Knowledge Content Statements:** − The student can choose a suitable location for audio field recording. − The student knows how to use their phone or other device to record audio. − The student knows how to prepare for an interview. **Underpinning Skills Content Statements:** − The student can place a microphone effectively to minimize noise. − The student can use a device to record audio. − The student can conduct an interview **Underpinning Reasoning Content Statements:** − The student can conduct an interview on a topic that is personally meaningful to them

Prior Grade Related Content Statement # NA	**Future Grade Related Content Statement # NA**

Content Elaborations

In this lesson, students learn how to record audio effectively with whatever device is available to them. That is usually a cell phone or Chromebook, but more advanced setups could use dedicated field recorders, external microphones with audio interfaces and computers, etc. The goal of the lesson is for students to understand that where they place the mic or recording device will affect the end result, as well as the location they choose. Students can explore different spaces and, if they are thoughtful, they will come to the conclusion that they need a quiet space without a lot of echo to get a good recording.

This lesson concentrates on recording speaking voices. That is a little outside the scope of music, but it will help develop good mic technique for later music projects. It also allows the students to speak on a matter that is important to them.

Instructional Strategies

Have students listen to or watch a professional interview, such as those from Fresh Air or The Breakfast Club. Ask them to observe the microphone placements and listen to the back-and-forth flow of the conversation.

Have students think about a topic that is important to them. Then ask them to choose an interview subject (this could be a classmate if you want them to record during class) and write a list of open-ended questions. Steer them away from simple questions that have definite, one-word answers (i.e. What's your favorite color?).

Tell them ahead of time that they will be editing the interviews, so they don't need to stop and start over if someone messes up or says something wrong. They should plan on recording about 10-15 minutes in order to edit the interview down to the best 2-3 minutes.

Sample Assessments and Performance Tasks

Ongoing, informal formative assessments through listening to and watching student projects.

Sample Interview Project that includes background music:

1. Create a new project and name it "Interview_Project_YOUR_NAME."
2. Conduct your interview. Be sure to place your microphone in an optimal position to capture your subject.
3. Edit the interview. Cut it down to between 1:30 and 2:00 minutes.
4. Compose and layer in the background music. Make sure it is not too loud, repetitive, or distracting in any way.
5. Add 5-10 seconds of the music before and after the interview.
6. Share your project as directed.

Instructional Resources

Great interview examples from NPR:
http://www.npr.org/sections/music-interviews/

Interviews by Studs Terkel:
http://studsterkel.wfmt.com/

Black Women Oral History Project Interviews, 1976-1981
http://guides.library.harvard.edu/schlesinger_bwohp

Interview tips:
https://www.forbes.com/sites/shelisrael/2012/04/14/8-tips-on-conducting-great-interviews/#2cd689a156f1

Unit 3- MIDI, Lesson 3.1- MIDI Recording and Editing

Unpacked Standards / Clear Content Statement

Content Statement # HSAC.2PE Incorporate technology and media arts in creating, composing and arranging music	**Essential Understanding** MIDI is data, not sound MIDI sequencing and editing **Extended Understanding** Form, repetition, and variation in music composition Reusing MIDI to generate music	**Academic Vocabulary** MIDI Sequencing Controller Form Repetition Variation
Artistic Process Type(s): Performing	**Broad Content Statement:** – The student can create and edit MIDI parts. – The student can compose music with MIDI **Underpinning Knowledge Content Statements:** – The student knows that MIDI is data, not sound – The student understands the different ways to input and edit MIDI **Underpinning Skills Content Statements:** – The student can sequence MIDI by recording and drawing. – The student can edit MIDI – The student can reuse MIDI parts creatively **Underpinning Reasoning Content Statements:** – The student can compose music that is personally meaningful.	

Prior Grade Related Content Statement # NA	Future Grade Related Content Statement # NA

Content Elaborations

MIDI is data, not sound. I tell the students to consider their typing keyboards. Are there letters inside the keyboard- of course not! You press the letter "t" and "t" appears on the screen. It's the same for MIDI keyboard controllers. MIDI data is routed through a software instrument, where it is converted into digital sound.

Sequencing MIDI can also be compared to word processing, as it has the same edit functions- cut, copy, paste, duplicate, etc. Show the students how you can quickly build a song by reusing MIDI clips and then changing them slightly. Perhaps you transpose the notes up or down one octave, shift the rhythm by one beat, or use a different software instrument. There are lots of ways to generate new material from one clip.

This lesson is also an occasion to branch out into more traditional elements of music theory, such as form and texture. As in the first lesson, it's good practice to use popular formal structures (intro, outro, verse, chorus, build, breakdown, etc.) in place of "classical" forms (sonata, AABA, rondo, etc.) that are not typically present in the music most people listen to today.

When teaching sequencing, make sure to show students they can use a MIDI controller or their typing keyboard to record in real time and that they can also draw notes into the MIDI editor with their mouse.

Instructional Strategies

Again, make sure to have a demonstration project or two ready before you begin the lesson.

Rather than starting with a blank project, which is intimidating, have students drag in a simple drum or percussion loop to play along to. You could also use the metronome for this, but a loop is more satisfying and inspirational.

Tell the students to compose their own 4-bar and 8-bar loops. This will allow them to build on their knowledge of audio loops and will encourage proper phrasing.

If students have a hard time staying in a musical key, have them use only the black keys, which form a pentatonic scale. The root will be whatever note is most

prominent.

Once students have entered some notes, show them how to edit their parts, then allow time for practice.

MIDI drums deserve special attention. Most software drum racks have the kick drum set to C1, the snare on D1 and E1, closed hi-hat on F#1, etc. If students transpose MIDI notes on these tracks, they will actually be switching sounds, or placing the notes completely out of range for the software drums, resulting in no sound. This is a common problem.

Sample Assessments and Performance Tasks

Ongoing, informal formative assessments through listening to and watching student projects.

Loop Composition Project Part 2

For this project, simply have students add MIDI parts to their audio loop composition. You can specify the number and types of parts if you wish. There will usually be several students who want to do a whole new composition. That's great and you should let them!

Instructional Resources

MIDI Basics:
https://blog.landr.com/what-is-midi/
https://www.sweetwater.com/insync/midi-essential-guide/
https://www.midi.org/
https://en.wikipedia.org/wiki/MIDI

Unit 3- MIDI, Lesson 3.2- MIDI Import and Software Instrument Parameters

Unpacked Standards / Clear Content Statement

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Content Statement #	Essential Understanding	Academic Vocabulary
HSAC.2PE Incorporate technology and media arts in creating, composing and arranging music.	Importing MIDI data Manipulating software instrument parameters **Extended Understanding** MIDI instrument choice Creating custom sounds with software instruments	MIDI Type 0 and Type 1 Parameter Preset Orchestration

Artistic Process Type(s): Performing	**Broad Content Statement:** – The student can import existing MIDI data – The student can adjust software instrument parameters to create custom sounds and presets **Underpinning Knowledge Content Statements:** – The student knows how to find and import MIDI tracks and clips – The student knows how to adjust software instrument parameters **Underpinning Skills Content Statements:** – The student can assign software instruments to imported MIDI tracks – The student can manipulate software instrument parameters **Underpinning Reasoning Content Statements:** – The student can exercise choice, judgment, and creativity by orchestrating a pre-existing MIDI composition

Prior Grade Related Content Statement # NA	Future Grade Related Content Statement # NA

Content Elaborations

In this lesson, students will find and download MIDI clips from the internet (or a folder you provide). There is a huge online community of producers who meticulously record every song imaginable with MIDI instruments, then put the MIDI files online for free. As long as you are using these in your classroom, these files are fair use and not subject to copyright limitations.

There are, as of this writing, two types of MIDI files- Type 0, which combines all the MIDI data into one track, and Type 1, which provides separate tracks for each MIDI instrument. There is often no way to tell the types apart until they are imported into a DAW. So if a student loads a MIDI file and all the notes are mashed together in one track, you should tell them to choose a different file. Type 0 files may be separated according to MIDI channel information, but that is outside the scope of this course.

This lesson uses pre-existing MIDI tracks in order to allow students to concentrate on crafting sounds to play each part. Once students import MIDI tracks into their DAW, they can assign a software instrument to each track. I recommend starting with a simple piano sound in order to evaluate the function of a track. Once they realize it's a bass line, or sustaining pad for example, then they can assign a more appropriate instrument, such as bass guitar or strings.

Once students have chosen an appropriate software instrument, they should change the sound of that instrument by manipulating the available parameters. If possible, they should save their own custom presets for later recall.

This lesson teaches students about orchestration- choosing and using sounds that blend together and evoke an emotional response from the listener.

Instructional Strategies

As always, make sure to have examples ready to go beforehand.

Like other lessons, have students listen to "professional" products that reflect the lesson material. These can be found on the same sites that host the MIDI files.

Demo, clarification, practice time, spot check, repeat.

Sample Assessments and Performance Tasks

1. Ongoing, informal formative assessments through listening to and watching student projects.
2. Sample MIDI Orchestration Project
3. Create a new project and name it "MIDI_Orch_YOUR_NAME."
4. Import your chosen MIDI file into your DAW
5. Insert a software instrument on each track to hear the MIDI notes.

   *They will not play without an instrument because MIDI is data, not audio. I suggest a piano sound.

6. Determine the function of each track and rename accordingly (i.e., bass, percussion, drums, lead, etc.).
7. Choose suitable software instruments and presets for each track or create your own patches.
8. Change the settings on the software instruments as needed.
9. Balance and pan tracks.
10. Share your project as directed.

Alternative: Custom Instrument Preset Project

Have students design an instrument preset and save it with their name in the preset name (i.e. "Nyzera's Bass"). This project is quicker, so you can use it if you are crunched for time.

Instructional Resources

Free MIDI files
https://www.midiworld.com/
https://bitmidi.com/
https://www.cprato.com/

Unit 3- MIDI, Lesson 3.3- Culminating Project

Unpacked Standards / Clear Content Statement

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Content Statement # HSAC.2PE Incorporate technology and media arts in creating, composing and arranging music.	Essential Understanding Combining audio and MIDI in one project Extended Understanding Composing music with audio and MIDI	Academic Vocabulary Vocab review from previous lessons

Artistic Process Type(s): Performing	**Broad Content Statement:** − The student can combine the knowledge and skills of the previous lessons to create a new piece of music. **Underpinning Knowledge Content Statements:** − The student can compose using both audio and MIDI **Underpinning Skills Content Statements:** − The student can record, import, and edit audio − The student can record, import, and edit MIDI − The student can apply proper balance and panning **Underpinning Reasoning Content Statements:** − The student can compose music that is personally meaningful.

Prior Grade Related Content Statement # NA	Future Grade Related Content Statement # NA

Content Elaborations

This lesson includes no new information or skills. Instead it is an extended period of time in which students create a new project that combines everything they have learned so far. There is a lot of range in this project, so advanced students can incorporate recordings, audio loops, MIDI clips and sequencing or whatever they want, while lower-performing students can concentrate their efforts on one or two of these things. Differentiation is a strength of the music technology classroom, because one student's performance doesn't usually affect another's.

Instructional Strategies

You should give students some concrete requirements for this project, but also allow them freedom to create something that is meaningful to them. As always, circulate around the room, looking and listening. Avoid giving unsolicited advice unless there is something catastrophically wrong with a project. You don't want to have a bunch of projects that reflect the teacher's taste, rather you are aiming for authentic student expressions.

Sample Assessments and Performance Tasks

1. Ongoing, informal formative assessments through listening to and watching student projects.
2. Sample Make a Beat Project
3. Create a new project and name it "Beat_YOUR_NAME".
4. Choose a tempo.
5. Choose at least 5 loops and arrange them into a piece that has a beginning, middle, and end. You may use more loops if you wish.
6. Add at least three virtual instruments to your composition. Use them to compose your own loops to add to the beat.
   a. Make your original loops 2, 4, or 8 bars long.
   b. Don't be too drum-heavy. Add pads and melodic parts too!
7. Your piece should be at least 32 bars in length.
   a. Layer your loops creatively and avoid the "stair-step" beat.
   b. Try putting all of your chosen loops together and then subtracting elements to create a musical form.

8. Use the track volume controls to balance the audio levels of each track.
9. Share your project as directed.

Instructional Resources

Links for students who are really interested in deeper study of MIDI
MPE:
https://www.midi.org/midi-articles/midi-polyphonic-expression-mpe
https://roli.com/mpe
https://www.izotope.com/en/learn/midi-polyphonic-expression-explained.html
https://support.roli.com/support/solutions/articles/36000027933-what-is-mpe-

MIDI 2.0:
https://www.soundonsound.com/music-business/introducing-midi-20
https://www.sweetwater.com/insync/midi-2-0-what-actually-matters-for-musicians/
https://www.midi.org/midi-articles/details-about-midi-2-0-midi-ci-profiles-and-property-exchange

Unit 4- DSP, Lesson 4.1- DSP: EQ, Reverb, and Delay

Unpacked Standards / Clear Content Statement		
Content Statement # HSAC.2PE Incorporate technology and media arts in creating, composing and arranging music.	**Essential Understanding** Uses and implementation of digital signal processing (DSP)- EQ, reverb, and delay **Extended Understanding** Using DSP to enhance a composition	**Academic Vocabulary** Digital signal processing (DSP) EQ Reverb Delay Wet/dry mix Frequency band Boost/cut Q

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Artistic Process Type(s): Performing	**Broad Content Statement:** − The student can use DSP tools (EQ, reverb, and delay) to enhance a composition. **Underpinning Knowledge Content Statements:** − The student understands the basic parameters of EQ, reverb, and delay − The student knows how to apply DSP tools to tracks in a composition **Underpinning Skills Content Statements:** − The student can choose and manipulate DSP tools effectively − The student can enhance a composition with DSP **Underpinning Reasoning Content Statements:** − The student can use DSP to make creative choices

Prior Grade Related Content Statement # NA	**Future Grade Related Content Statement # NA**

Content Elaborations

After the culminating project solidifies and clarifies students' thinking, they will be ready to learn additional skills. Digital signal processing (DSP) is a cornerstone of music production and is also very fun!

The three DSP tools presented in this lesson are easy to hear. The instructional resources below can provide more information about these tools. You need to have a solid grasp on how to use these tools before you teach the lesson.

Students can explore DSP by applying the tools to their previous projects.

Instructional Strategies

Demonstrate each DSP tool (also called a "plug-in") one at a time, giving time in between demos for student practice. Encourage them to explore and analyze the presets that come with each plug-in, and then go beyond by manipulating the plug-in's parameters.

The most important control in most plug-ins is the "wet/dry" knob, which controls the strength of the effect.

Sample Assessments and Performance Tasks

Ongoing, informal formative assessments through listening to and watching student projects.

Applying DSP Project

For this project, simply have the students experiment putting EQ, reverb, and delay on a previous project of their choice. This is a quick project. You could make it worth half-credit or skip it altogether if pressed for time.

Instructional Resources

Resources for DSP
https://blog.landr.com/eq-basics-everything-musicians-need-know-eq/
https://blog.landr.com/what-is-reverb/
https://www.izotope.com/en/learn/when-to-use-reverb-and-delay.html

Unit 4- DSP, Lesson 4.2- Final Project

Unpacked Standards / Clear Content Statement

Content Statement # HSAC.2PE Incorporate technology and media arts in creating, composing and arranging music.		**Essential Understanding** Combining audio, MIDI, and DSP in a new project **Extended Understanding** Creative composition using audio, MIDI, and DSP	**Academic Vocabulary** Vocab review from previous lessons
Artistic Process Type(s): Performing	**Broad Content Statement:** – The student can combine audio, MIDI, and DSP to create a new music composition **Underpinning Knowledge Content Statements:** – The student knows how to combine audio, MIDI, and DSP **Underpinning Skills Content Statements:** – The student can compose and mix music using audio, MIDI, and DSP – **Underpinning Reasoning Content Statements:** – The student can compose music that is personally meaningful.		
Prior Grade Related Content Statement # NA		**Future Grade Related Content Statement # NA**	

Content Elaborations

The final project is essentially another iteration of the culminating project from Unit 3, with the addition of DSP tools. By giving students another opportunity to review and create, you will help them solidify skills and increase their speed and workflow. The example project is to create an ambient soundscape, but you should feel free to direct the students to create whatever you or they would like.

Instructional Strategies

All of the usual advice applies: have examples ready, circulate around the room, listening and watching as you go. If possible, allow time at the end of the quarter or at the beginning of the next quarter to showcase students' work. A "listening gallery" is a great idea for parent-teacher conferences or open house nights, in the lobby outside the school's music concert, or any other time parents and administrators are present.

Sample Assessments and Performance Tasks

Ongoing, informal formative assessments through listening to and watching student projects.

Final Project.

This is essentially a combination of all the previous projects. You can decide what elements must be included and what are optional. Conversely, you can have the students decide how to include their new skills and knowledge.

Instructional Resources

A set of inspiring videos centered around creative music production. The video uses Ableton Live, but many of the concepts can be applied to other DAWs.
https://www.ableton.com/en/one-thing/

Unit 5- Post-Production, Lesson 5.1- Intro to Post-Production

Unpacked Standards / Clear Content Statement		
Content Statement # HSAC.2RE Analyze how multiple media artworks combine style and content to create an effective multisensory audience experience.	**Essential Understanding** The nature and elements of post-production The differences between audio-only production and audio for video **Extended Understanding** Similarities and differences between audio and video editing software	**Academic Vocabulary** Post-production Sound effects Dialogue Scoring Sync Asset

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Artistic Process Type(s):
 	
Responding
	Broad Content Statement:
	  − The student understands the basic elements and workflow of audio for video, also known as post-production
	
	Underpinning Knowledge Content Statements:
	  − The student can identify the audio elements of a video production
	  − The student can compare and contrast audio-only project with audio for video projects in terms of assets and workflow
	
	Underpinning Skills Content Statements:
	  − The student can perform simple video edits
	
	Underpinning Reasoning Content Statements:
	  − The student will be able to watch and listen to a video critically

Prior Grade Related Content Statement # NA	**Future Grade Related Content Statement # NA**

Content Elaborations

This lesson introduces students to the concept of post-production. While this term literally means anything that happens after basic recording or shooting, in practice it refers to audio enhancements of video, including dialogue recording and replacement, sound effects and Foley, and the musical score. Before jumping in to actually creating audio for post, you should take the time to watch videos, commercials, and movie and TV show clips with the students and guide them to watch and listen critically. Ask them to give their opinions on the importance of the audio. There are a few YouTube channels dedicated to "re-cut" trailers, that take existing movie trailers and redo the sound to change their mood and meaning. They are fun and instructive!

Instructional Strategies

Make sure to introduce these concepts in the context of actual videos and movies. Like us, students consume media nearly constantly, so they will likely be very adept at analyzing them. If they need a higher level of structure, you create a worksheet with categories of sound, such as footsteps, dish sounds, main dialogue, background dialogue, etc.

Have your examples ready ahead of time and make sure to pre-screen them thoroughly to make sure they are developmentally, culturally, and technologically appropriate for your class.

Sample Assessments and Performance Tasks

If you need to assign a grade for this lesson, you could give students points for participating in a guided watching/listening session in which they list all the sounds they hear.

Instructional Resources

Re-cut trailers
https://www.youtube.com/watch?v=xWHXjjQlq3U&list=PL1AXWu-gGX6JadJEiXPLdjoFF_kK9lKqE

Unit 6- Sound effects, Lesson 6.1- Sound effects Libraries

Unpacked Standards / Clear Content Statement

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Content Statement # HSAC.2PE Incorporate technology and media arts in creating, composing and arranging music.	Essential Understanding The role of sound effects in post-production Using sound effects libraries **Extended Understanding** Using editing and DSP to create custom sound effects	Academic Vocabulary Asset management Index Naming convention

Artistic Process Type(s): Performing	**Broad Content Statement:** − The student can locate, acquire, and use sound effects from sound effects libraries − The student can organize sound effects and other assets effectively **Underpinning Knowledge Content Statements:** − The student can locate online sound effects libraries and download sound files − The student can develop an effective method for sound effect and asset management **Underpinning Skills Content Statements:** − The student can use DSP tools to customize sounds and create new sound effects **Underpinning Reasoning Content Statements:** − The student can create and manage a library of original sound effects − The student can use DSP tools in a creative manner

Prior Grade Related Content Statement # NA	Future Grade Related Content Statement # NA

Content Elaborations

In this lesson, students will acquire sound effects from free online effects libraries. Then, they will use their knowledge of DSP tools and editing skills to change those effects or even create brand new effects from scratch.

The most challenging part of this lesson is the naming and organization of the sound effects. Students should use a "naming convention"- a regular method of naming files that is both descriptive and sequential. For example, files of different footsteps might be named footsteps_walking_gravel, footsteps_running_gravel, footsteps_walking_hiheels_wood, footsteps_running_sneaker_squeaks, etc.

You can decide how many sound effects students need to collect, change or create and how and where they should store them.

Instructional Strategies

Have examples ready to go of raw, unprocessed sound effects, as well as before and after examples of processed sound effects.

If you feel brave, do live demonstrations showing how to find and download sounds and then how to manipulate them with DSP tools.

Make sure to stress the importance of proper naming and file organization.

Give students plenty of time to practice each step.

Sample Assessments and Performance Tasks

Ongoing, informal formative assessments through listening to and watching student projects.

Sample Compile a Sound Effects Library Project:

1. Use freesound.org to audition and select at least 10 sound effects.
2. Download the selected effects and place them in a folder. Make sure they have descriptive names.
3. Import these sound effects into your DAW and experiment with editing and DSP tools.
4. Create at least 30 new sound effects from the original 10.
5. Export your new sounds and add them to your sound effects folder. Make sure you name them appropriately.
6. Share your folder of sound effects as directed.

Instructional Resources

Free sound effects library
https://freesound.org/

Unit 6- Sound effects, Lesson 6.2- Foley effects

Unpacked Standards / Clear Content Statement

Content Statement # HSP.2CR Combine production processes to demonstrate deliberate choices in organizing and integrating content in media art productions.	**Essential Understanding** The nature and history of Foley sound effects Basic Foley techniques **Extended Understanding** Advanced and creative Foley techniques Using creative editing and DSP to enhance Foley sound	**Academic Vocabulary** Foley

Artistic Process Type(s): Creating	**Broad Content Statement:** – The student will understand what Foley sound effects are and how to create them **Underpinning Knowledge Content Statements:** – The student knows the history of Foley – The student knows understands Foley workflow **Underpinning Skills Content Statements:** – The student can record Foley sounds – The student can use editing and DSP to enhance Foley sounds **Underpinning Reasoning Content Statements:** – The student can use Foley and other tools to create both realistic and imaginary sounds for use in productions

Prior Grade Related Content Statement # NA	Future Grade Related Content Statement # NA

Content Elaborations

In this lesson, students explore another primary method of creating sound effects- Foley. Jack Foley was a pioneer of live sound effects in radio and early film and TV. Students usually enjoy learning a bit about the history of this unusual art. They also benefit from understanding that Foley sound is a viable career path, as many productions still use Foley today.

This lesson is essentially the same as the previous lesson, but with the addition of recording. Students like getting out of the classroom to go around their school or neighborhood to collect sounds with a recording device.

They also like to manipulate those sounds with editing and DSP to get some surprising and unpredictable results.

Instructional Strategies

Show students footage of historic or current Foley artists and have them read accounts of famous Foley sounds, such as the lasers in the original Star Wars movies coming from recordings of a radio tower guy wire being struck with a hammer.

Get students out of the classrooms individually, in teams, or as a whole group to record a wide variety of sounds- echoes in a stairwell, footsteps on sidewalks, blacktop, mulch, and grass, a ruler smacking on a table, etc.

Make sure students are naming their files descriptively, according to a naming convention.

You may need to help students export their recordings. I suggest sending them to an online folder, such as Google Drive, MS OneDrive, Dropbox, etc.

Show students some ways to customize their sounds with editing and DSP. By now, they should be quite familiar with this approach.

As you move around the room, double-check on students' file naming and organization. It will save a lot of headaches further down the road!

Sample Assessments and Performance Tasks

Ongoing, informal formative assessments through listening to and watching student projects.

Sample Foley Sound Effects Library Project:

1. Use your cell phone or another device to record a wide variety of sounds in the environment.
2. Make sure you give the sound files descriptive names.
3. Import these sound effects into your DAW and experiment with editing and DSP tools.
4. Create at least 30 new sound effects from the original recordings.
5. Export your new sounds and add them to your sound effects folder. Make sure you name them appropriately.
6. Share your folder of sound effects as directed.

Instructional Resources

Resources for Foley sound
https://www.adobe.com/creativecloud/video/discover/foley-sound-effects.html
https://www.sound-ideas.com/Page/what-is-foley.aspx

Unit 7- Dialogue, Lesson 7.1- Location Sound

Unpacked Standards / Clear Content Statement

Content Statement #	Essential Understanding	Academic Vocabulary
HSP.2CR Combine production processes to demonstrate deliberate choices in organizing and integrating content in media art productions.	Recording location sound and dialogue Contrasting diegetic and non-diegetic sound **Extended Understanding** Shooting video with sound effectively with a cell phone Using DSP to clean up sound	Location sound Dialogue Diegetic/non-diegetic

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Artistic Process Type(s): Creating	**Broad Content Statement:** − The student can record a video with the best possible location sound and dialogue **Underpinning Knowledge Content Statements:** − The student knows where to place a cell phone or other device for optimal sound and picture − The student knows the difference between diegetic and non-diegetic sound **Underpinning Skills Content Statements:** − The student is able to record a video with good sound and picture − The student can use DSP to clean up location sound **Underpinning Reasoning Content Statements:** − The student can create a video that is personally meaningful to them

Prior Grade Related Content Statement # NA	**Future Grade Related Content Statement # NA**

Content Elaborations

In this lesson, students gain experience shooting video with a cell phone, Chromebook, or other device. In doing this, they focus, in particular, on recording high quality dialogue.

The built-in camera apps on most phones are suitable for this task.

The key to recording clean audio on location is proper mic placement. One common technique is to use the built-in microphone found on some wired and wireless headphones with a mobile recording app such as Voice Recorder or Voice Memos. If this setup is not practical, then place the phone midway between the speakers, on a flat surface or tripod.

The subject of the video is up to the teacher and/or the students. If students are personally invested in the topic, they are more likely to do a good job.

Instructional Strategies

Like all projects, make sure to have examples prepared ahead of time. Break the overall task down into constituent parts and allow plenty of time for student practice in between demonstrations.

Have students practice the technical elements (setting up a cell phone on a tripod, evaluating scene lighting, test recordings, etc.) first. Then have them brainstorm and refine ideas for their videos and make a plan for how to shoot it.

Allow students to pick a space outside the classroom for their videos if possible.

Keep the videos short (30 seconds to one minute) and simple. This lesson is just a warm up for a larger project.

Sample Assessments and Performance Tasks

Ongoing, informal formative assessments through listening to and watching student projects.

Short Video Project

1. Students brainstorm and plan a short simple video shoot
2. Students shoot the video with a cell phone on a tripod or other device
3. Students record audio with the same device or a second device
4. Students marry (sync) the audio and video media together in a video editor
5. Students edit and mix the audio, using DSP to clean it up (i.e. use a high-pass filter to eliminate background rumble)
6. Students share project as directed

Instructional Resources

Resources for shooting video with a cell phone
https://www.nytimes.com/2018/04/17/smarter-living/beginners-guide-phone-video.html
https://www.theverge.com/2017/7/26/16026238/smartphone-video-editing-apps-how-to-tips-iphone-android

Resources for recording location sound
https://soundclass.weebly.com/5-location-sound.html
https://nofilmschool.com/2018/08/4-pro-tips-will-help-you-get-better-sound-location
https://www.linkedin.com/business/learning/blog/productivity-tips/3-simple-tricks-to-record-great-audio-with-your-phone
https://blog.accusonus.com/fix-broken-audio/better-phone-recordings/

Unit 7- Dialogue, Lesson 7.2- ADR

Unpacked Standards / Clear Content Statement		
Content Statement # HSP.2CR Combine production processes to demonstrate deliberate choices in organizing and integrating content in media art productions.	**Essential Understanding** Location dialogue is often replaced with with re-recorded dialogue in a studio environment Voiceovers are a form of non-diegetic dialogue **Extended Understanding** Preparing for a successful ADR session Acting with feeling makes for a successful product	**Academic Vocabulary** Automatic dialogue replacement (ADR)
Artistic Process Type(s): Creating	**Broad Content Statement:** – The student can assess the need for ADR, then successfully record and implement ADR **Underpinning Knowledge Content Statements:** – The student knows that location dialogue is often replaced with studio re-recordings – The students knows how to set up a microphone and video monitor for an ADR session **Underpinning Skills Content Statements:** – The student can successfully conduct an ADR session – The student can import and edit ADR recordings **Underpinning Reasoning Content Statements:** – The student can use ADR to solve problems with location sound – The student can use ADR creatively to change the meaning of a scene	

Prior Grade Related Content Statement # NA	Future Grade Related Content Statement # NA

Content Elaborations

In this lesson, students learn about automatic dialogue replacement (ADR). Contrary to its name, this is not an automatic process; it takes a lot of skill, effort, and perseverance to replace dialogue. Adding sound effects and music follows a similar workflow, but is typically called "sweetening".
This lesson gives students practice with ADR and with voiceover work, if desired.

Instructional Strategies

Start by showing movie scenes and point out instances where ADR was likely used. There are many low budget movies available on streaming services, especially Amazon Prime, that have terrible ADR mixing. Those types of videos are instructive because the ADR is easier to spot and they show what happens when movie sound isn't great. In general, most people will tolerate a movie or video with bad visual aspects much more than they will one with bad audio.

For the project, you can go a few different routes. One route is to have students re-record the dialogue from the previous project. That would be true ADR and would allow them to reuse material for a faster result. Another project would be a commercial voiceover, in which students record themselves speaking over a commercial for a product. You could collaborate with another class who makes commercials, or you can download commercials from the internet with a YouTube downloader site. Another idea is to have the students make a "bad lip reading" video. This gives students practice with ADR and generates interest with humor.

The main hurdle in this lesson is the ADR setup and workflow. If you have a studio at your disposal, it's quite easy. But because this curriculum is designed with minimal equipment in mind, here is one method:
1. Students watch a video on a Chromebook or a phone, writing down the original dialogue or writing new dialogue, as directed.
2. Student practice delivering lines on time and in sync with the original dialogue.
3. Students use a second device to record their ADR dialogue.
4. The ADR recording is then exported from the second device and married to the video in a video editor, such as WeVideo, for editing.

Sample Assessments and Performance Tasks

Ongoing, informal formative assessments through listening to and watching student projects.

ADR for a previous project

Commercial Voiceover Project

Sample Bad Lip Reading Project

1. Students audition many videos and select one or more scenes. If they select multiple scenes, they need to be cut together in video editing software.
2. Students watch their selected scenes, paying close attention to mouth movements. It is helpful to watch the videos with the sound off.
3. Students write down alternative, often nonsensical alternative dialogue.
4. Students use ADR techniques to record the new dialogue.
5. Students marry the new dialogue to the video and mix the audio appropriately.
6. Students share the project as directed.

Instructional Resources

Bad Lip Reading YouTube Channel
https://www.youtube.com/channel/UC67f2Qf7FYhtoUIF4Sf29cA

Resources for ADR
https://www.studiobinder.com/blog/what-is-adr-in-film/
https://blog.frame.io/2018/06/11/adr-film-primer/

Unit 7- Dialogue, Lesson 7.3- Culminating Project

Unpacked Standards / Clear Content Statement

![Columbus City Schools logo]

Content Statement #	Essential Understanding	Academic Vocabulary
HSAD.2CR Synthesize content, processes and assembly components to express compelling purpose, story, emotion or ideas in complex media art productions.	Combining sound effects, dialogue, and music to create a compelling video soundtrack **Extended Understanding** The soundtrack of a video has a tremendous impact on the effectiveness and mood of the video	Dialogue tracks- DX Sound effects tracks- FX Music tracks- MX Stem

Artistic Process Type(s): Creating	**Broad Content Statement:** – Student can combine DX, FX, and MX to create a compelling video soundtrack **Underpinning Knowledge Content Statements:** – The student understands pos-production elements and workflow **Underpinning Skills Content Statements:** – The student can record and edit location dialogue and ADR – The student can find, enhance, and create sound effects – The student can compose original music for video **Underpinning Reasoning Content Statements:** – The student can apply post-production techniques to enhance or subvert the mood and message of a video

Prior Grade Related Content Statement # NA	Future Grade Related Content Statement # NA

Content Elaborations

This lesson combines all of the elements of post-production in one unified project. Students will use their skills in recording, creating, and editing dialogue, sound effects, and music to create a complete soundtrack for a video commercial.

A "stem" is one element of a soundtrack- dialogue, sound effects, or music. The stems are often mixed and exported separately for different reasons. For example, the Harry Potter film franchise has an associated orchestral tour that travels to venues around the country. The movie plays on a very large screen with the dialogue and sound effects intact. The original music is muted and the score is played by a live orchestra. This is only possible with stem separation.

Instructional Strategies

As always- examples, demo and practice, etc.

You can give the students a commercial to work with or have them find their own. This is an ideal project for students to work in teams.

In this larger project, keeping students on task and on schedule is very important. Any project with multiple parts invites the teacher to evaluate at the various stages of production along the way. Nothing makes a principal happier than a robust grade book with lots of grades entered!

Sample Assessments and Performance Tasks

Ongoing, informal formative assessments through listening to and watching student projects.

Sample Commercial Project

1. Student select or are given a short commercial video (30 seconds to one minute)
2. Students use all the skills they have learned to replace the dialogue (DX, ADR), sound effects (FX), and music (MX)
3. Students should make sure the soundtrack is fully edited and mixed to the best of their ability
4. Students should share the project as directed

Instructional Resources

Resources for commercials

Unit 8- DSP, Lesson 8.1- DSP: Compression and Limiting

Unpacked Standards / Clear Content Statement		
Content Statement # HSAC.2PE Incorporate technology and media arts in creating, composing and arranging music.	**Essential Understanding** Dynamic range in audio Uses and implementation of digital signal processing (DSP)- compression and limiting **Extended Understanding** Using DSP to enhance a video project	**Academic Vocabulary** Dynamic range Compression Limiting Clipping

Artistic Process Type(s):
 	
Performing
	Broad Content Statement:
	  – The student can implement compression and limiting
	
	Underpinning Knowledge Content Statements:
	  – The student understands what dynamic range is in audio
	  – The student understands the basic parameters of a compressor and limiter
	  – The student knows how to apply DSP tools in a video project
	
	Underpinning Skills Content Statements:
	  – The student can use DSP tools to manage the dynamic range of audio
	  – The student can use DSP tools to make a mix louder without clipping
	Underpinning Reasoning Content Statements:
	  – The student can use DSP to solve problems and make creative choices	

Prior Grade Related Content Statement # NA	Future Grade Related Content Statement # NA

Content Elaborations

This lesson introduces students to the somewhat difficult topic of compression and limiting. You can learn more about these tools with the resources listed below. The reason these DSP tools are more difficult to understand than EQ, reverb, and delay is that they are harder to hear. They are also easier to use incorrectly and thus, ruin an otherwise effective mix.

Students will use compression and limiting to ensure their projects are as loud as possible, without distorting. This is important because in the professional world, loud mixes get more attention than quieter mixes.

Instructional Strategies

Demonstrate compression by using extreme settings so it's easier for students to hear. Make sure to show sound meters as well so the students can see the volume level changing.

You should manage your expectations for student prowess with compression. It is a tricky skill that takes years to master.

Sample Assessments and Performance Tasks

Ongoing, informal formative assessments through listening to and watching student projects.

Applying DSP Project

For this project, simply have the students experiment putting compression and limiting on a previous project of their choice. This is a quick project. You could make it worth half-credit or skip it altogether if pressed for time.

Instructional Resources

Resources for compression and limiting
https://blog.landr.com/how-to-use-a-compressor/
https://music.tutsplus.com/tutorials/the-beginners-guide-to-compression--audio-953
https://blog.landr.com/limiter/
https://www.izotope.com/en/learn/an-introduction-to-limiters-and-how-to-use-them.html

Unit 8- DSP, Lesson 8.2- Final Project

Unpacked Standards / Clear Content Statement		
Content Statement # HSAD.2CR Synthesize content, processes and assembly components to express compelling purpose, story, emotion or ideas in complex media art productions.	**Essential Understanding** Combining DX, ADR, FX, MX, and DSP in a new audio for video project **Extended Understanding** Creating a compelling soundtrack for a video project	**Academic Vocabulary** Vocab review from previous lessons

Artistic Process Type(s): Creating	**Broad Content Statement:** − The student can combine the knowledge and skills of the previous lessons to create a new video soundtrack **Underpinning Knowledge Content Statements:** − The student knows how to combine DX, ADR, FX, MX, and DSP **Underpinning Skills Content Statements:** − The student can create a soundtrack for video using DX, ADR, FX, MX, and DSP **Underpinning Reasoning Content Statements:** − The student can create a compelling soundtrack for a video

Prior Grade Related Content Statement # NA	**Future Grade Related Content Statement # NA**

Content Elaborations
The final project takes students' skills to another level. This can be in the form of the audio for video project outlined below, or you can assign a different project that includes students shooting video themselves.

Instructional Strategies

This is an ideal project for students to work in teams.

At the end of the project, make sure to build in at least a day to have a class film festival to share student work. If you can arrange a streaming setup, you can invite parents and others to watch along with the class.

Sample Assessments and Performance Tasks

Ongoing, informal formative assessments through listening to and watching student projects.

Sample Audio for Video Project

1. Find and download a suitable video clip.
2. Import your video into your video editing software and make any necessary edits. The final clip should be between 1.5 and 3 minutes.
3. Watch your clip several times and make a note of every sound you hear, including crowd or ambient noise, music, and sound effects.
4. Find or make sound effects that closely match those in the original audio. Import them into your session. Edit and place them as needed.
5. Create or find or substitute music. Make sure the new music carries the same emotional content and mood as the original.
6. Create a script of all the dialogue.
7. Record new dialogue tracks. Copy the original faithfully, in terms of style and delivery.
8. Mix your audio tracks and ensure they are in sync with the video. Make sure the voice parts are clear and audible.
9. Export your video. Make sure the original audio is muted! Name your video "YOUR_NAME_A4V".
10. Share your project as directed.

Instructional Resources

Sources for music, if students will not be creating their own
https://audiojungle.net/
https://stock.adobe.com/
https://stockmusic.net/
https://www.premiumbeat.com

Resources for professional post-production
https://www.344audio.com/single-post/the-ultimate-guide-to-audio-post-production-sound-design
https://www.pro-tools-expert.com/production-expert-1/what-is-audio-post-production
https://theproaudiofiles.com/roles-in-audio-post-production/