# STARTING A PRODUCTION CLASS IN MIDDLE AND HIGH SCHOOL

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**TMEA** 

11:00A, FEBRUARY 16, 2019

HTTP://FLOYDRICHMOND.COM/TMEA2019

# TEXAS A&M CORPUS CHRISTI PRESENTS

#### Dr. Brian Shelton:

Chair of Music Department Director of Symphonic Band

### Dr. Dan Sipes

Low Brass Professor
Director of Music Business

### Dr. Floyd Richmond

Visiting Assistant Professor Director of Concert Band Music Education

# Reaching the other 75%

Performing ensembles reach 25% of the students in the average public school.

Should we train the other 75%?

- Builds audiences for live and professional musicians
- Enriches the lives of students who do not elect performing ensembles.

# Reaching the other 75%

"Arts learning is the best way to develop creative competencies in people. We know through the creative process people learn to generate and communicate ideas more effectively. They learn to see multiple solutions, to solve problems differently. They learn to take risks. . . . Our focus on education is incredibly important, and our focus on advocacy in arts education is critical. It's essential to our economy. It's essential to the vibrancy of our communities, and to its effect on our people and their happiness."

Kelly Pollack

# Reaching the other 75%

#### **General Music Electives**

- Music Appreciation
- Music Theory (for the 25% in performing ensembles)
- Piano
- Guitar
- Special topics such as jazz, world music, or broadway.
- Music Production and/or Technology

# Reaching the other 75%

- 7th and 8th graders, and high school students don't respond well to a traditional music appreciation approach (lecture and listening)
- Developmentally, they need to be actively engaged

# Reaching the other 75%

- Students find music production classes engaging.
- Students may be exposed to the same music and concepts as in other music classes.
- Students may work with contemporary styles which they view as more relevant.
- Students work with music on a level where they are closely involved in formal and stylistic details.
- Students are involved in the creative process, arranging, improvising and composing.
- Technology can help eliminate poor student choices.
- Students can experience higher levels of success, more quickly.

# ADVANTAGES OF MUSIC PRODUCTION

#### Music production classes help performing ensembles

- The students may record large and small groups, and concerts
- The students can operate the soundboard and lights for school concerts and events.
- Students can prepare media for band, choir and orchestra promotions, broadcasts, etc.

The true purpose of arts education is not necessarily to create more professional dancers or artists. [It's] to create more complete human beings who are critical thinkers, who have curious minds, who can lead productive lives.

# MUSIC TEKS

#### 1. Foundations: music literacy

The student *describes and analyzes music* and musical sound. The student explores fundamental skills appropriate for a developing young musician.

#### 2. Creative expression

The student demonstrates musical artistry by *singing or playing* an instrument, alone and in groups, performing a variety of unison, homophonic, and polyphonic repertoire. The student *makes music* at an appropriate level of difficulty and performs in a variety of genres from notation and by memory.

#### 3. Historical and cultural relevance

The student *relates music to history*, culture, and the world.

#### 4. Critical evaluation and response

The student *listens to, responds to, and evaluates music* and musical performance in both formal and informal settings.

# BROAD TOPICS OF MUSIC PRODUCTION

- Audio Production (setup, capture, production, post production)
- Video Production (setup, capture, production, post production)
- Live Performance
- Sound Reinforcement
- Lighting
- Broadcast and Distance Services
- Streaming
- Notation

• NOTE: Most classes don't do all these topics. This session focuses on audio production.

# EQUIPMENT NEEDED

Hardware . . .

Software . . .

# HARDWARE NEEDED

#### **Processors:**

Computers, iPads, or Chromebooks

#### Gear:

Microphones, Audio Interface, Mixers, Amplifiers, Speakers, Cables

#### **Instruments**

Keyboards, Other Instruments

# HARDWARE NEEDED

#### Computers

Best choice for heavy duty production

#### Laptop vs Desktop

- Laptops portable, but buy higher end machines.
- •Desktops more power, more expandable, lower cost, not portable.

#### **iPads**

iPads are an increasingly viable option for music production. GarageBand, Cubasis, Fruity Loops

#### Chromebooks -

Chromebooks can do music production but are currently the most limited option. Must use cloud-based solutions such as SoundTrap or Soundation.

# HARDWARE NEEDED

- Microphones
- Mixers
- Amplification
- Cables

Audio Interface

Keyboards

Sound Reinforcement is accomplished through a fairly standard combination of equipment.

Microphones and Instruments

Mixer

**Amplifiers** 

Speakers

Cables/Snake

Cables/Snake

Audio production uses the same model, but the mixer is in the software, and amplifiers and speakers are replaced with playback and saving/bouncing options.

Microphones and Instruments

Mixer

**Amplifiers** 

Speakers

Cables/Snake

Cables/Snake

Look at microphones

Microphones and Instruments

Mixer

**Amplifiers** 

Speakers

Cables/Snake

Cables/Snake

Microphones



Dynamic



Condenser

Microphones





Wireless Microphone Wireless Lapel



Ear worm

Wireless Receivers



Microphones and Instruments

Mixer

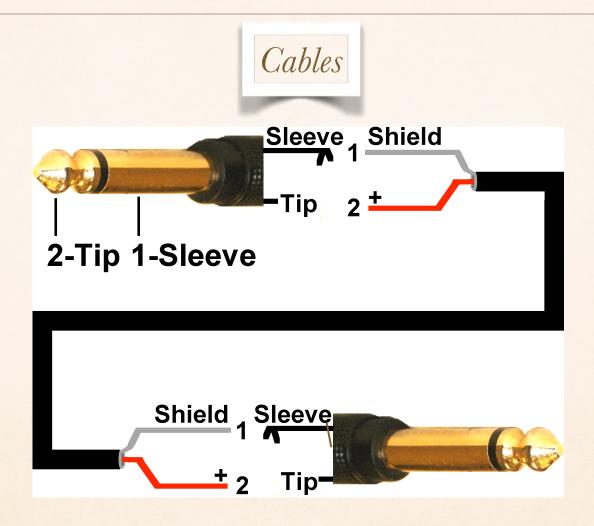
Amplifier

Speakers

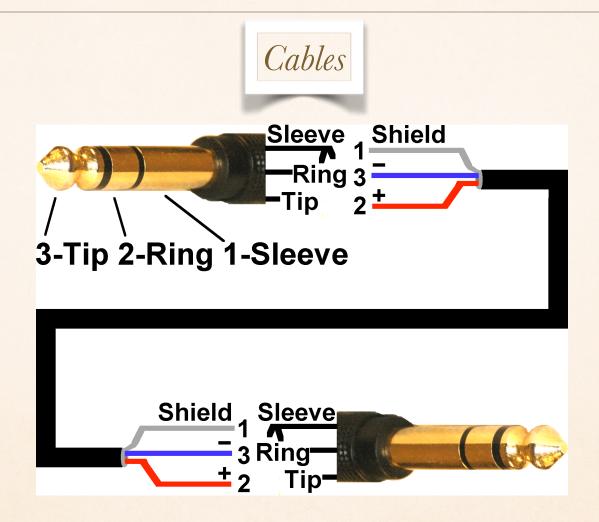
Cables/Snake

Cables/Snake



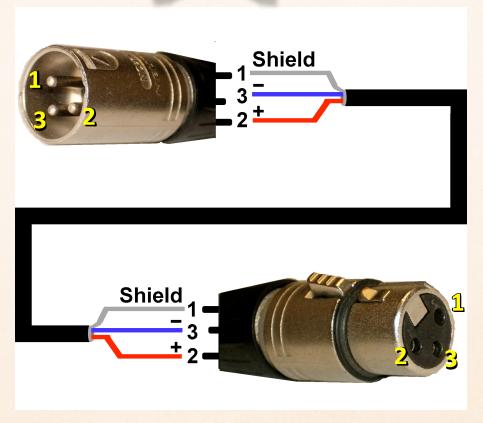


1/4" TS for Instruments such as Guitar, Bass, Keys



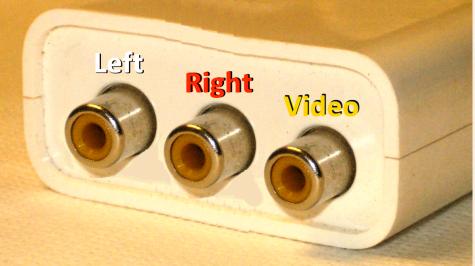
1/4" TRS for Balanced Lines and Stereo Equipment





XLR for Microphones





RCA Cables primarily for CD and DVD players, tape recorders

### Instruments/Direct Boxes





Snake





Microphones and Instruments



Amplifier

Speakers

Cables/Snake

Cables/Snake

### Mixer - Allen and Heath iLive 112



### Mixer - Mackie SR 24-4-VLZ Pro



Mixer - Allen and Heath GL 3300



Digital Mixer - Digidesign 8



### Digital Mixer - Digidesign Control 24



Digital Mixer - Presonus StudioLive 24.4.2.24



#### DIGITAL MIXERS

Digital Mixers provide fundamentally the same operations as analog mixers, however, common differences are as follows.

- (1) Additional effects on each track.
  - (1) Filters EQ
  - (2) Dynamics Compression and Limiting
  - (3) Noise Gating
  - (4) Time Reverb, Echo, Delay
- (2) The ability to save and recall board settings from different rehearsals.
- (3) Recording Interface can record each single track for separate mix-down later.
- (4) Greater complexity (extra features) less approachable interface.

Microphones and Instruments



Cables/Snake

Cables/Snake

Cables



Powered Speakers
(Amplifier and Speakers)



Amplifiers



Microphones and Instruments

Mixer



Cables/Snake

Cables/Snake

Cables

Speakers



Microphones and Instruments

Mixer

Amplifier

Speakers

Cables/Snake

Cables/Snake

Cables



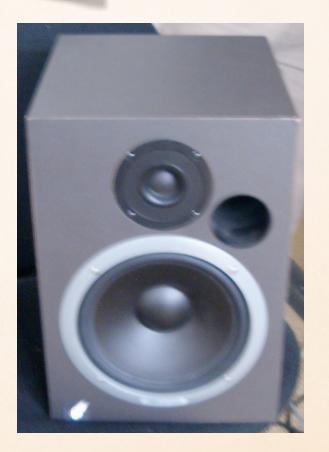
# Monitor Speakers

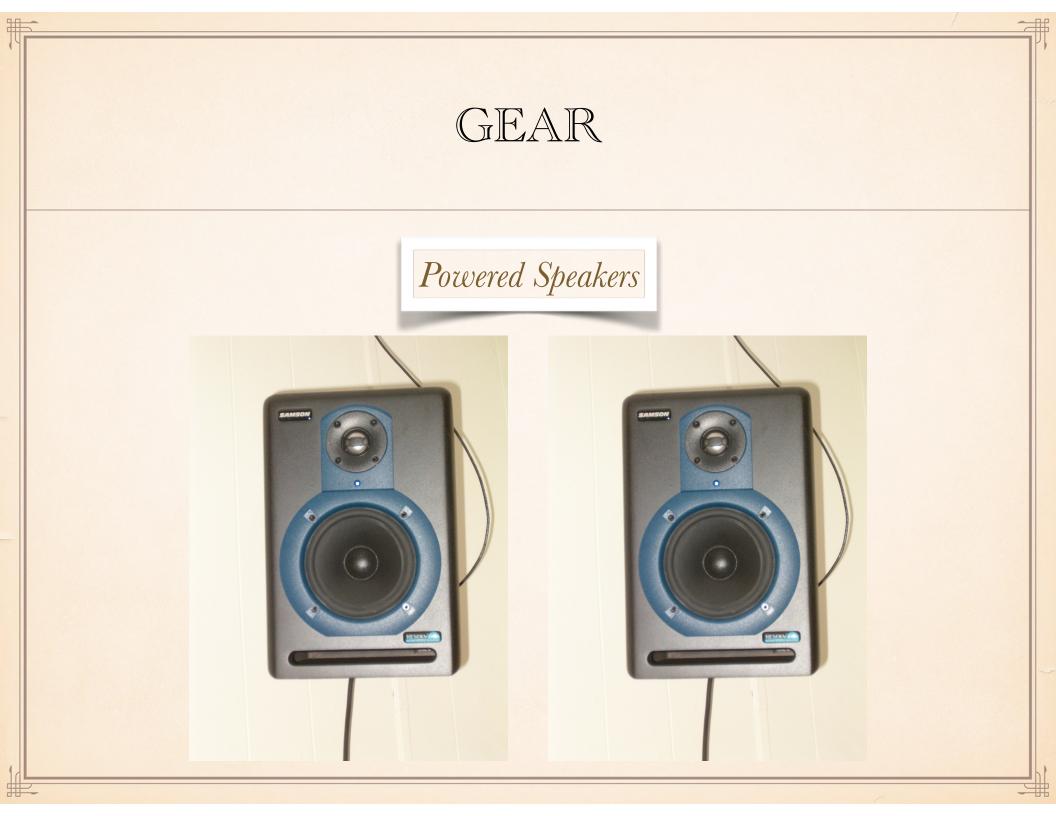




# Powered Speakers





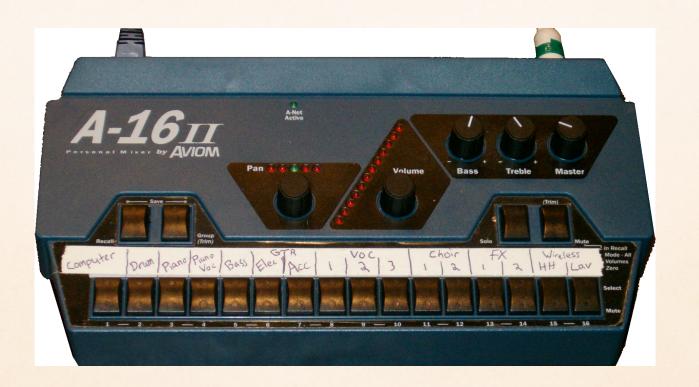




Powered Speakers



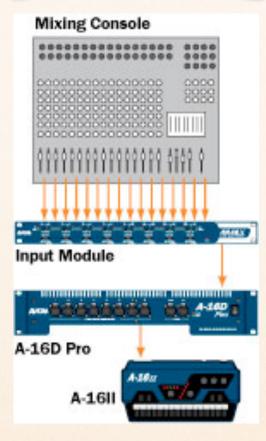












Microphones and Instruments

Mixer

Amplifier

Speakers

Cables/Snake

Cables/Snake

Cables

Amplifier

Monitors

#### MIXER - THE CHANNEL STRIP



### MIXER - SUB MIXES



#### MIXING

- Sound Levels Balance voices
- Equalization Design sounds for best tone and to fit together.
- Panning Place sounds in space
- **Reverb** Use different amounts and channels for singing/speaking.
- **Compression** Apply to channels which are subject to wide variations in levels, and especially to those which are often tooloud.

# AUDIO INTERFACE



#### KEYBOARDS

- Controller sends signals to virtual instruments (usually software instruments such as MainStage on a computer, iPad, or hardware). Audio is from computer or other hardware. May include knobs for mapping to and controlling virtual instruments and for creative sound design on them.
- Workstation has built-in sounds and audio and may control other devices. It does not require virtual instruments for performance (plug it in and turn it on, then play). May include knobs for mapping to and controlling virtual instruments and for creative sound design on them, as well as for its own built-in sounds.

#### KEYBOARDS

#### • Size -

24 to 88 keys, with 48, and 60 being common sizes.



- MIDI MIDI In, Out, and Thru ports allow the instrument to connect to other MIDI instruments, and to computers. Most modern instruments have a keyboard to computer interface built in and connect through USB to a computer. Modern instruments, and devices, may connect to MIDI through bluetooth.
- Weighted Keys Instruments may come with no weighting (like an organ), semi-weighted (some weighting), and fully weighted.

#### KEYBOARDS

#### **Major Brands**

- •Korg
- Yamaha
- Roland
- Akai
- Alesis
- •M-Audio
- •Nord
- PreSonus
- •1K Multimedia

#### **Many Brands:**

- •AirTurn
- •Akai
- •Alesis
- •Arturia
- •Behringer
- •CME
- •Crumar
- •Doepfer
- •GSi
- •Hammond
- •Hornberg Research

- •IK Multimedia
- Kawai
- •Keith McMillen Instruments
- •Korg
- Livid
- •M-Audio
- •Native Instruments
- •Nektar
- •Nord
- Novation
- •One Control
- PreSonus

- Reloop
- Rocktron
- •Roger Linn Design
- Roland
- ROLI
- •Samson
- Source Audio
- Studiologic
- Tech 21
- Voodoo Lab
- Yamaha

### VIRTUAL INSTRUMENTS

Apple

Avid

Arturia

Best Service

**EastWest** 

Garritan

Heavyocity

IK Multimedia

Line 6

**Native** 

**Instruments** 

Output

Positive Grid

**Propellerhead** 

Sensory Percussion Spectrasonics

Steinberg

Steven Slate

Drums

Toontrack

UVI

Vengeance-Sound

XLN Audio

Note: Bold designates bigger companies. There is quality in all of these.

#### VIRTUAL INSTRUMENTS

# Mainstage









#### OTHER INSTRUMENTS

Electric Guitar

Electric Bass

Acoustic Guitar

Electronic or MIDI Drums

MIDI Instruments (EWI, etc.)

# SOUND REINFORCEMENT MANUFACTURERS - MICROPHONES

- Shure
- Sennheiser
- Electrovoice
- Audix
- Neuman
- Beyer

- AKG
- Cascades
- Earthworks
- Rhode
- Blue
- Audio Technica

# SOUND REINFORCEMENT MANUFACTURERS - MIXERS

- Presonus
- Mackie
- Allen and Heath
- Peavey
- Yamaha
- Taft
- Carbin
- Avid
- Behringer
- Midas

# SOUND REINFORCEMENT MANUFACTURERS - SPEAKERS

- Mackie
- M-Audio
- JBL
- Peavey
- Fender
- Fishman
- Bose
- Yamaha

### DEALERS

- Romeo
- Soundtree
- Sweetwater
- Musician's Friend
- Sam Ash
- Guitar Center
- Woodwind/Brasswind

**Audacity** - Free, good for straight capture and multi-track recording, destructive editing, no MIDI, instruments or loops.

GarageBand - Free, for Mac only. Best interface in the business, but hides complexity/power. Extensive loops.

MixCraft - Modeled after GarageBand interface, Windows only, Great collection of loops. Educational discounts!

Cakewalk - Free, formerly a commercial product. Windows only.

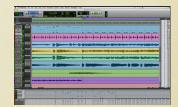
**ProTools First** - Free, Like ProTools, but limited songs in the cloud.



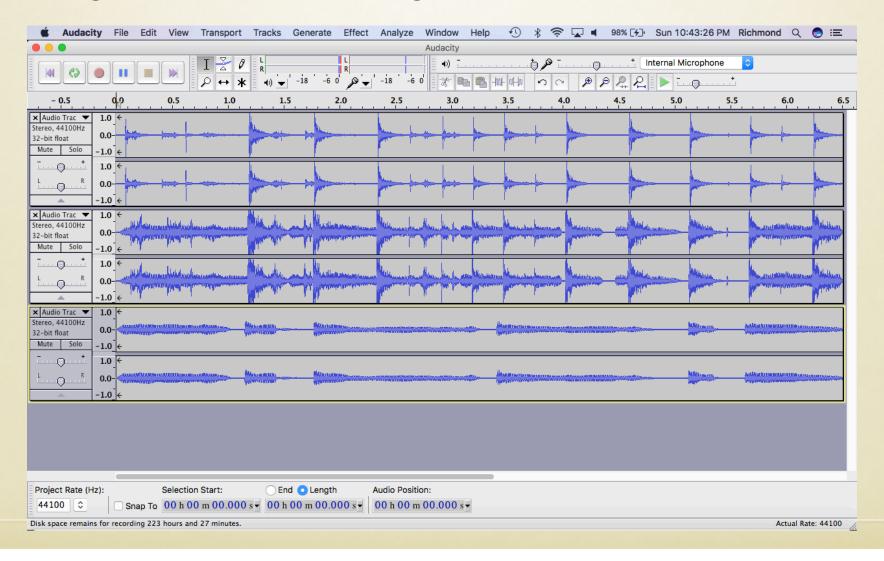




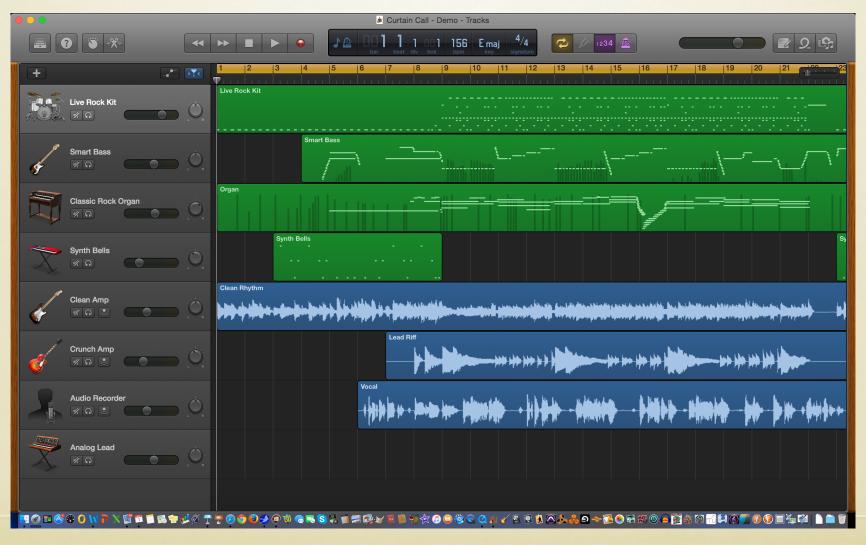




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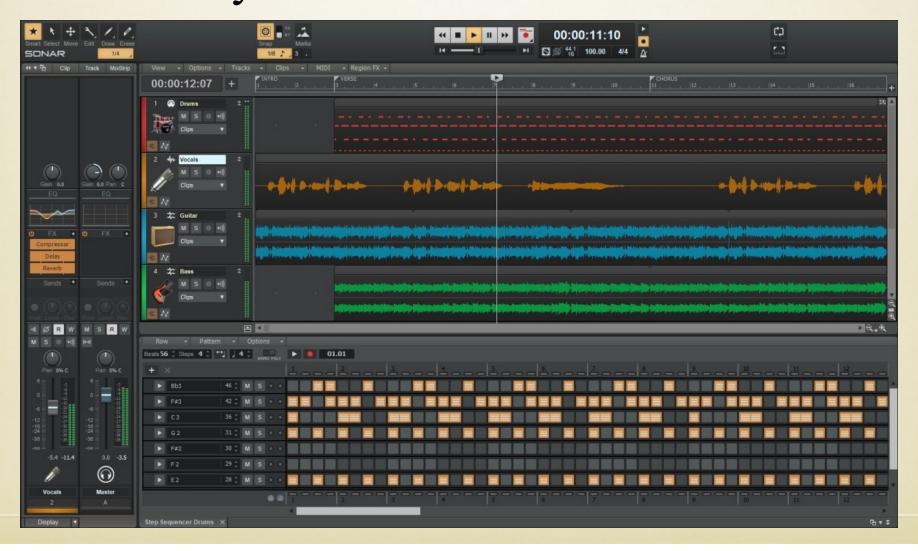
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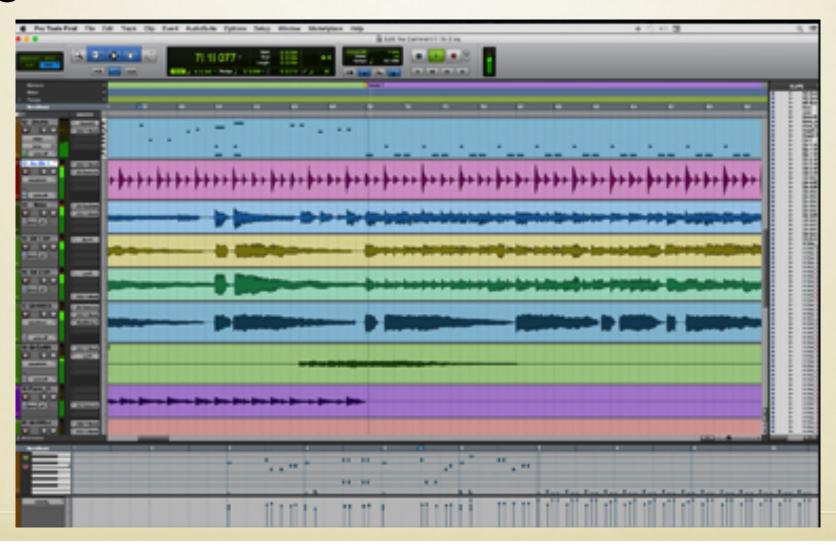
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## SOFTWARE

**ProTools** - Industry standard, strong community, quality, good for straight capture and multi-track recording, includes non-destructive editing, supports MIDI, expandable (extensive editing requires additional plug-ins and instruments). Limited loops and loop interface. \$\$\$,

Logic - A powerful and affordable package with quality consistent with ProTools, extensive non-destructive editing, supports MIDI, can use plug-ins and third-party instruments, but comes with a lot more than ProTools, saving money due to less required expansion. Strong loops! \$\$

## SOFTWARE

Ableton Live - Excellent quality, consistent with Logic and ProTools. Has a unique session view (Advanced DJ compositional mode). Interfaces with some unique hardware. Makes many changes in live or real-time. Excellent Loops. \$\$

**Reason** - Excellent quality, consistent with Logic and ProTools. Has a unique studio view (lets you put together and program a virtual studio). Excellent loops. \$\$

Steinberg's Cubase and Presonus' StudioOne - Strong contenders, on approximately the ProTools level with a greater selection of instruments, and some unique editing capabilities. \$

### SOFTWARE

**SoundTrap** - Increasingly powerful, cloud-based DAW. Owned by Spotify. Good collection of loops. Free version has a limited number of loops. Premium version requires a subscription. Ideal for Chromebooks.

**Soundation** - A cloud-based DAW and one of the earliest. Free version has a limited number of loops. Premium version requires a subscription. Formerly developed using Flash, it was incompatible with Chromebooks, but it is now available in a version without Flash. Ideal for Chromebooks.

Both of these programs have a excellent subscription deal through MusicFirst.

## SOFTWARE FOR IOS

GarageBand - Free! Amazingly powerful DAW for tablet or phone. Adds a collection of exceptional DAW based instruments which may be played using the touch screen (not available on the computer). Projects on GarageBand for iOS may be taken to GarageBand, or to Logic for further development (but not back to the iPad).

**Cubasis** - \$40! An iOS version of Cubase, and in a few ways, more capable than GarageBand (supports MIDI in and out). GarageBand is MIDI in only.

Fruity Loops - \$15! An iOS (also Windows) app that uses a strong loop based approach to production.

## Curriculum

Now, we have the gear, what do we teach?

# Bibliography

http://www.alfred.com/LearningGarageBand

GarageBand \*\* iPad

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This essential guide to GarageBand on iPad and iOS devices is your foundation for learning music production in the classroom. Written by Dr. Floyd Richmond, noted iPad music expert and the president of TI:ME (Technology Institute for Music Educators), Learning Music with GarageBand on the iPad provides instant insight and wisdom through Dr. Richmond's many years of experience. Includes over 40 GarageBand song files.

# Teaching Idea

- Open a Demo Song
- Describe the tracks used in the song



## Quickstart 1

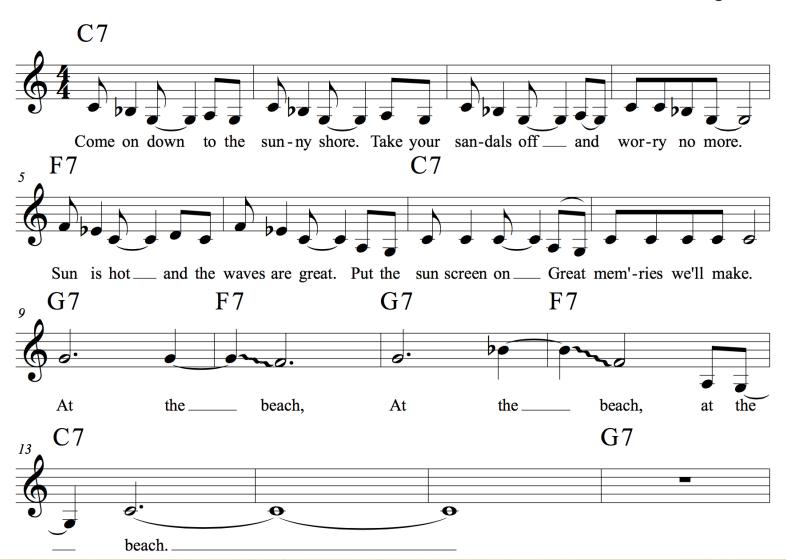
- Open a Demo Song
- Record a new vocal track



Melody and Chords

### At the Beach

Derek and Katie Baughman



## Quickstart 2

- Create aSong UsingOnly Loops
  - Search "Cuban"
  - Arrange
     as shown.



## Teaching Idea

- Record aRap
  - SearchHip Hop
  - Arrangeasshown.



## Quickstart 3

- Playing and Recording Garageband's Instruments and Smart Instruments
- Keyboard
- Guitar
- Bass
- Strings
- Drum Set









• See chapter 13

- Create an audio soundscape (use synth pads).
- Write a jingle for an imaginary product and record it.
- Record a story and add sound effects from GarageBand (Orff style).
- Create a musical intro and outro for a television program such as the evening news or your favorite sitcom.
- Record a soundtrack for a familiar television episode or a silent movie such as the one found at <a href="https://youtu.be/mpjEyBKSfJQ">https://youtu.be/mpjEyBKSfJQ</a>.
- Record an entire program for a radio broadcast. Write the dialogue for the drama. Write a score for the musical background.

- Create a loop-based song describing animals (like Saint-Saëns).
- Compose a percussion piece in rondo style using the automatic drum machine.
- Compose a song with loops only. (Learn about form, repetition, and contrast. Write two sections (A and B) with contrasting range, rhythm, melody

- Create a song in one of the following styles:
  - 1940s swing combo
  - 1950s doo wop
  - 1960s rock
  - 1970s classic rock
  - 1980s keyboard disco/dance and/or hip-hop
  - 1990s ballad
  - 2000s techno
  - 2010s

# Additional Teaching Activities Recording

- Record a round of a song, such as "Are You Sleeping?", and copy and paste it into multiple tracks.
- Practice a piano piece and record it on an iOS device using MIDI.

## Additional Teaching Activities Enhance Existing Recordings

- Open a song of your choice. Create a new audio track, and every four measures record "Oh yeah" or something similar.
- Add a drum build every four measures to an existing song.
- Add expressions (dynamics) to an existing song.
- Add expressions (tempo changes) to an existing song.
- Add a harmony part with your voice to an existing song.
- Add a second drum or guitar track to an existing song
- Add a repeat and fade ending to an existing song.

- Replace the melody track of a song of your choice with your voice singing the melody.
- Delete an existing melody, and write and record a new melody and lyrics for a song of your choice.
- Write a new song by recording an accompaniment with smart instruments and then recording a melody and original lyrics.
- Create an accompaniment for an existing melody.
- Create a rap to be performed over an instrumental hip-hop, dance, or techno song.

- Play and record the 12-bar blues chord progression using one of GarageBand's smart instruments; then compose and record a melody with original lyrics.
- Play and record the 12-bar blues chord progression using one of GarageBand's smart instruments; then improvise and record a scat melody.
- Play and record the doo wop chord progression using one of GarageBand's smart instruments; then compose and record a melody with original lyrics.

- Write and record a new pop song. Include all parts using loops, digital audio, or MIDI recordings.
- Write and record a new classical song.
- Write and record a new round.
- · Write and record a theme and a variation.

- Record yourself singing or playing a song. Listen to it and critique your performance.
- Remix a set of given tracks from one of the songs in a new and different way.
- Rehearse and prepare every voice of a simple a cappella song. Record each track into GarageBand for iOS.
- Participate in a Jam Session and record the team effort as a song.

## Garage Band Ensembles

Hardware (Mixers, Jam Hub)

- Decades
- Cultures
- ◆ Folk Music
- Events
- ◆ Just for Fun

## Teaching Activities

- ◆ Performance
- Recording
- ◆Composition
- Listening
- Other Activities

## Teaching Activities-Performance

- Listen to a GarageBand song, and sing or play along.
- Turn off the vocal or melodic tracks, and sing or play along with only the accompaniment.
- Form an iPad ensemble to play the song.
  - One or more people should play the melody on an instrument appropriate for this style.
  - One or more should play a bass line using a simple rhythm and following the given chords.
  - One or more should play a GarageBand smart instrument using the chords indicated. Create a Jam Session to synchronize more than one smart instrument if necessary.
  - One or more should improvise a drum part.
- Turn to the arrangements from the downloads and play the versions found there.

## Teaching Activities-Recording

- Lyrics and melodies
  - If there are lyrics, mute the melody and record yourself singing into a new track.
  - If there are no lyrics, mute the melody and record yourself playing it into a new track.
- Mute the various tracks and replace them with your performances. Try to match the style of the original.
- Find a guitar track and use GarageBand's guitar effects to add overdrive or other effects to the recorded guitar.

## Teaching Activities-Composition

- Write and record new lyrics and record yourself
- Create and record a spoken rap.
- Improvise a new melody.
  - Use the same or new lyrics,
  - or use scat syllables (scooby, doo, wah, dot, dah, bah, doot).
- Replace the tracks of a song with your composed parts in the same style.
- Replace the tracks of a song with your composed parts in a different style.
- Create a theme and variations for a selected song
  - Rerecord new variations live.
  - Change the mode from major to minor or vice versa.
  - Change the melody to include different notes or rhythms.
  - Change the chords harmonizing a song.
- Slice, cut, and paste digital audio and MIDI tracks into new arrangements.
- Using only GarageBand loops, create your own rondo in ABACABA form.
- Write your own pentatonic song.
  - Use either a major (C, D, E, G A) or a minor (C, D, Eb, G, Ab) scale.

## Teaching Activities-Listening

- Listen to a song and list the instruments used.
- Change the instruments that are used to play each voice (if permitted)
- Listen to the provided GarageBand songs and describe
  - Melody: Is diatonic, pentatonic, or other?
  - Harmony: Is it consonant or dissonant, major or minor?
  - Rhythm: What are the time signature and tempo? Do the eighth notes swing or are they played evenly? What are other unique rhythmic features?
  - Form: Describe the sections found in the piece. Make a formal map of the song.
  - Expression: Describe dynamics, tempos, and articulations of the piece.
  - Style: Describe the style of the song.
- Listen to the various voices in the piece (drums, guitar, bass, keys). On the music in the book, mark the measures where they play.

## Teaching Activities-Other

- Download additional sounds to the iPad and create an arrangement that features that sound file. Example, for "Old MacDonald," download farm-animal sounds and use them in the song.
- •Record a sound into GarageBand's sampler and create a composition featuring the recorded instrument.

## Teaching Concerns

**iPAD** 

- · MIDI
- Plug-and-Play Devices
- Audio Interfaces
- Pro-Microphones

## Teaching Concerns

### **iPAD**

- ◆ Projection (wired, wireless)
- Audio (wired, wireless)
- Syncing
- Installing Apps
- Printing, Screen Capture, Creating PDF files

# Additional Teaching Activities Technical Skills

- 1. Edit regions.
  - 1. Edit MIDI (regions, notes, and so on).
  - 2. Cut, copy, paste, duplicate, split, and delete MIDI and digital audio.
  - 3. Trim a region.
  - 4. Loop a region.
  - 5. Join regions.
  - 6. Snap to grid (on/off).
  - 7. Manage regions (A, B, length).

# Additional Teaching Activities Technical Skills

- Manage master effects (echo, reverb).
- Turn the metronome on/off.
- Turn count-in on/off.
- Set the project tempo, key, and time signature.
- Create a fade-out.
- Play music in the background.
- Expand the mixer.
- Monitor and manage levels, mute, solo, and pan tracks.
- Save songs, open songs, and manage songs.
- Enter note and play instruments using MIDI input.
- Record audio using external hardware for input.
- Layer (merge) recording of tracks.

# Bibliography

http://www.alfred.com/LearningGarageBand

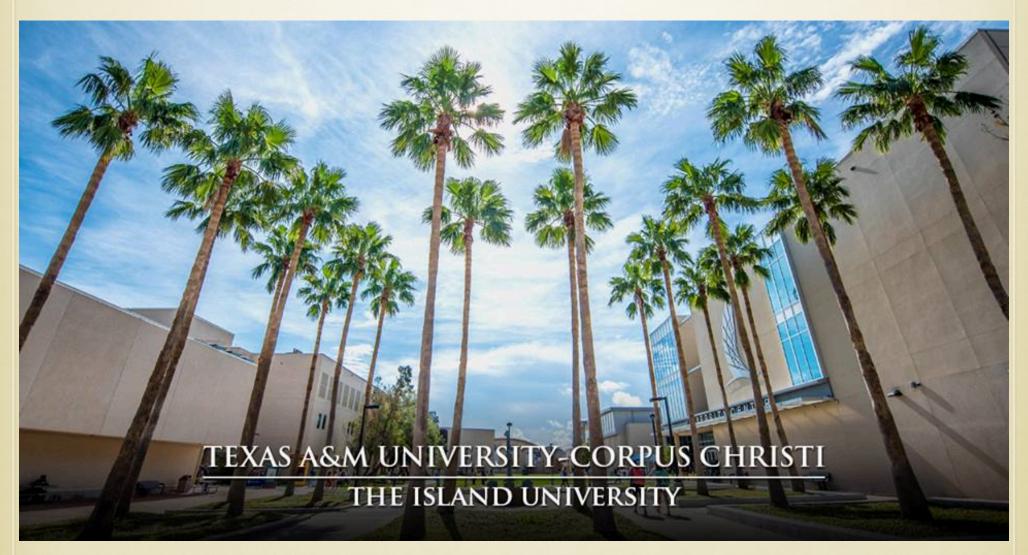
GarageBand \*\* iPad

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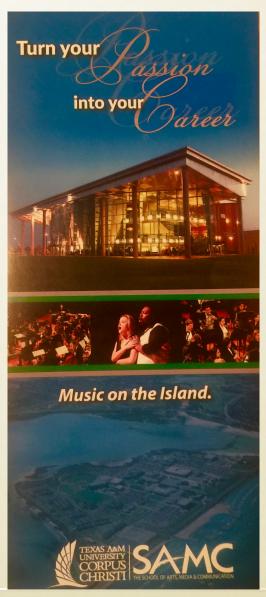












## STARTING A PRODUCTION CLASS IN MIDDLE AND HIGH SCHOOL

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**TMEA** 

11:00A, FEBRUARY 16, 2019

HTTP://FLOYDRICHMOND.COM/TMEA2019

#### **Music teacher K-12** - 1980-1986

(band director, general music, choir, orchestra)

#### **Higher Education** - since 1987

Ball State University - Doctoral Fellow

Taylor University - Externship

### West Chester University

- started music technology concentration in MM in Music Education

#### University of Valley Forge

- started undergraduate music education program
- started MM in Music Technology
- directed numerous small and large ensembles

#### Houghton College

- Coordinator of Music Education

### Texas A&M University - Corpus Christi

- Music Education, Concert Band Director, Tuba Ensemble Director

### **Graduate Music Technology Courses**

Ball State University (2 years)

West Chester University (13 years)

Villanova University (10 years)

Kent State University (10 years)

University of Valley Forge (15 years)

Boston University (2 years)

Five Towns College (5 years)

Pinellas County School District (11 years)

#### TI:ME

Education and Certification Chairman (since 1996)

Edited and wrote TI:ME Certification Courses

President (2014-2016)

Expanded membership

**Expanded connections to state MEAs** 

**Created Composition Contests** 

Expanded publications

Strengthened relations with educational and commercial members.

Conference Committee Member, and active presenter

**Executive Committee Member** 

**Board Member** 

#### **ATMI**

Conference Committee Chairman (2004-2019 Conferences) Active presenter

### Author

- https://www.amazon.com/Floyd-Richmond/e/B0042A8M5O

### **Composer and Arranger**

- <a href="http://floydrichmond.com/compositions/">http://floydrichmond.com/compositions/</a>
- <a href="http://floydrichmond.com/brass">http://floydrichmond.com/brass</a>