Starting a Production Class In Middle and High School

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http://floydrichmond.com/fmea2020

Tarleton State University
Texas A&M University System
Founding Member
Stephenville, TX
Dallas/Ft. Worth Metroplex

Dr. Floyd Richmond
Music Industry and Business
Applied Tuba

What We Will Cover In Today's Session

- **Why Music Production?**

- **Hardware**

- **Software**

- **Curriculum**

Why Music Production?

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.

Why Music Production?

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

Why Music Production?

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

Why Music Production?

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

Why Music Production?

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.

Why Music Production? Advantages

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.

KELLY POLLOCK

Why Music Production? Florida Standards HTML

1. Critical Thinking

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

2. Skills, Techniques, and Processes

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 explores fundamental skills appropriate for a developing young musician**.**

3. Organizational Structure

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

4. Historical and Global Connections

The student *relates music to* history, culture, and the world, including other academic disciplines.

5. Innovation, Technology and the Future

The student uses technology to arrange, create, and compose music and to share it with a broad audience.

WHY MUSIC PRODUCTION? NAFME STANDARDS

1. Perform

The student demonstrates musical artistry by ***singing or playing*** an instrument, alone and in groups, performing a variety of unison, homophonic, and polyphonic repertoire.

2. Creative

The student ***composes or improvises music*** at an appropriate level of difficulty and performs in a variety of genres from notation and by memory.

3. Respond

The student ***listens to, responds to, and evaluates music*** and musical performance in both formal and informal settings. The student ***describes and analyzes music*** and musical sound. The student explores fundamental skills appropriate for a developing young musician**.**

4. Connect

The student ***relates music to*** *history, culture, and the world, including other academic disciplines.*

Why Music Production?
Music Standards

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
We will look at . . .

Processors:

Computers, iPads, or Chromebooks

Gear:

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

Instruments

Keyboards, Other Instruments

Hardware

Computers
- Best choice for heavy duty production
- You can get started with a computer with the built in sound card
  and microphone (or if none, with a USB microphone).

Laptop vs Desktop
- Laptops - portable, but buy higher end machines. Built in mic and camera.
  Use external gear for higher quality.
- Desktops - more power, more expandable, lower cost, not portable.
  Require external mics/cameras.

iPads
- iPads are an increasingly viable option for music production.
  Have built in mics and cameras. Use external gear for higher quality.
  Software: 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, Soundation, or BandLab.
- Can use internal or external mics and cameras (but only universal drivers).

Hardware

- Microphones
  - Internal - convenient
  - External - quality

- Interface
  - Audio Interface - convenient, limited number of tracks
  - Mixers - more setup, more tracks, more complexity, supports live sound.

- Keyboards
  - Controllers (require DAW or virtual instruments)
  - Synthesizers/Samplers (have built in sounds)

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

Microphones and Instruments

Mixer

Amplifiers

Speakers

Cables/Snake

Cables/Snake

Cables

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

Microphones and Instruments

Mixer

Amplifiers

Speakers

Cables/Snake

Cables/Snake

Cables

Look at microphones

Microphones and Instruments

Mixer

Amplifiers

Speakers

Cables/Snake

Cables/Snake

Cables

Microphones

Dynamic   **Condenser**

Microphones

Wireless Microphone

Wireless Lapel

Ear worm

Wireless Receivers

Digging Deeper: Audio Hardware

Microphone Components

▶ The sound receiver (the transducer) is called the element or capsule.

▶ The element is contained in the housing

▶ The output

sound waves make diaphragm vibrate

wires carry electrical signal

magnetic coil attached to diaphragm
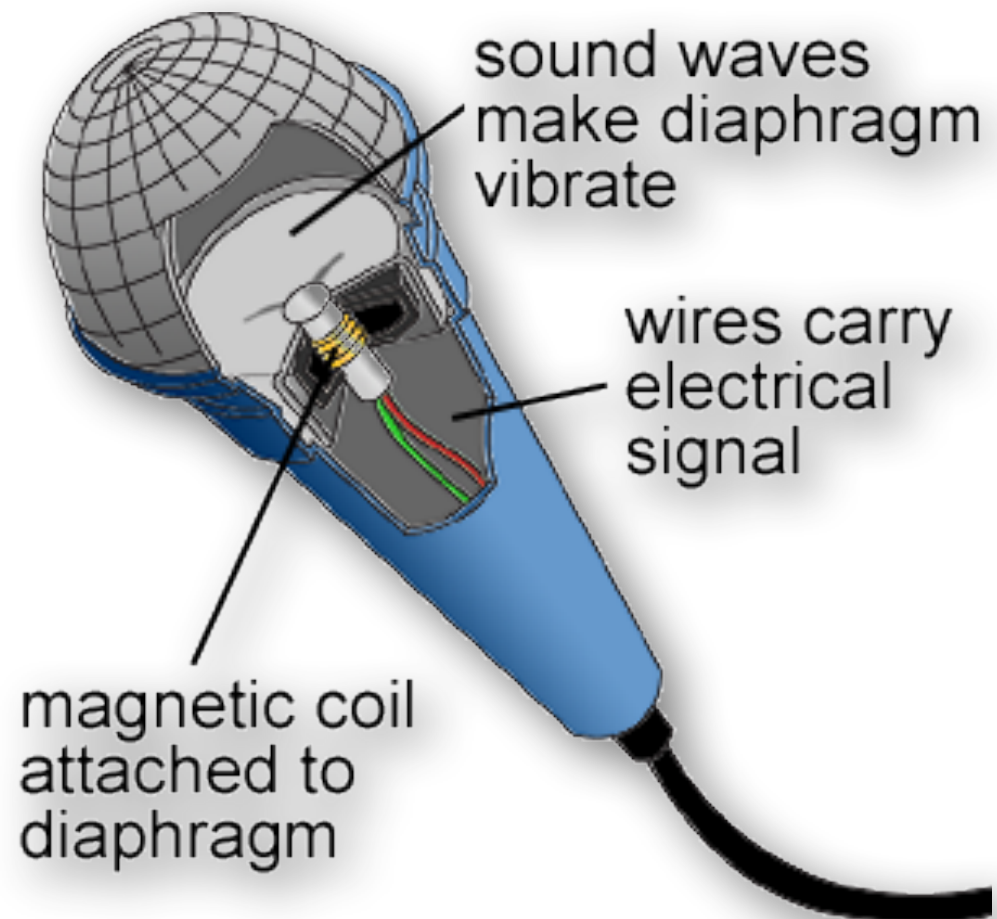
The Transducer

- A device which changes energy from one form into another
  - In this case from acoustic into electrical.
- Three main types of transducers
  - Dynamic
  - Condenser
  - Ribbon

Sound in

Magnet

Coil of wire in magnetic field

Cone structure to respond to sound pressure variations

Signal out
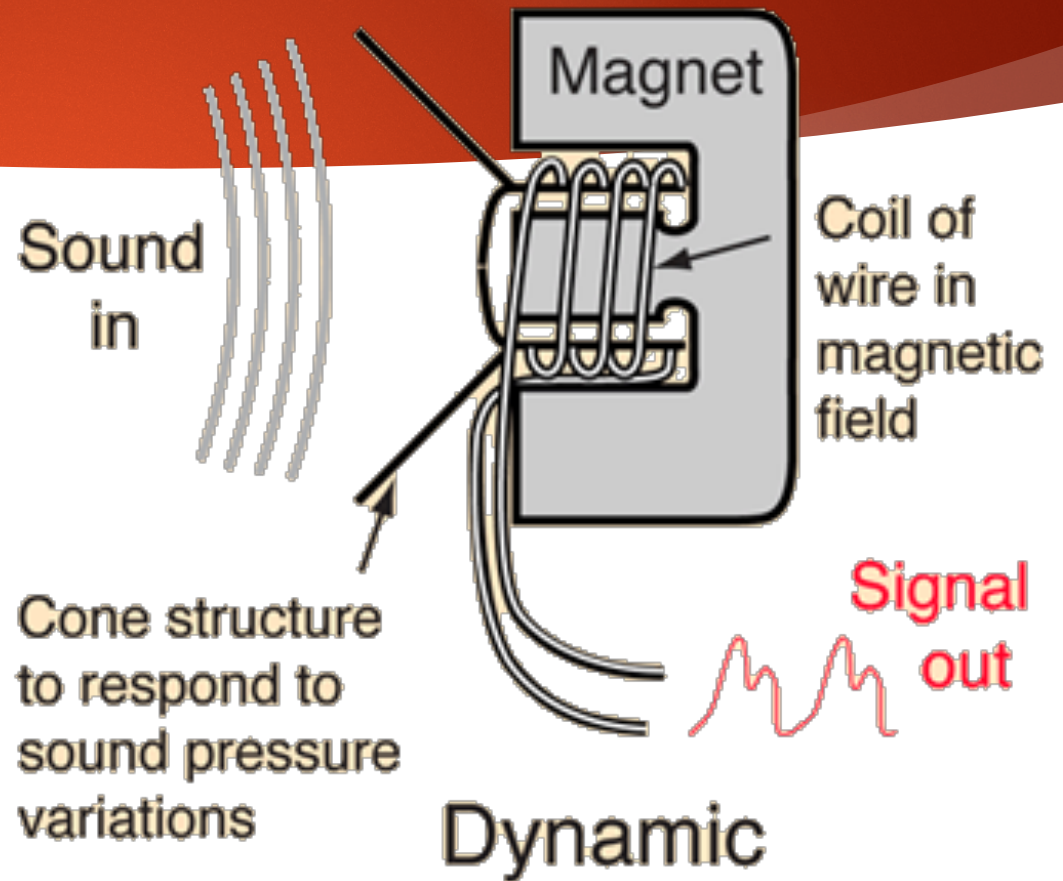
Dynamic

Dynamic Microphones

▶ The elements are made up of a diaphragm, voice coil, and magnet which form a sound-driven electrical generator.

▶ Sound waves move the diaphragm/voice coil in a magnetic field to generate the electrical equivalent of the acoustic sound wave.

▶ The signal does not need any additional circuitry.

▶ Extremely rugged

▶ Good sensitivity

▶ Can handle the loudest possible sound pressure levels without distortion.
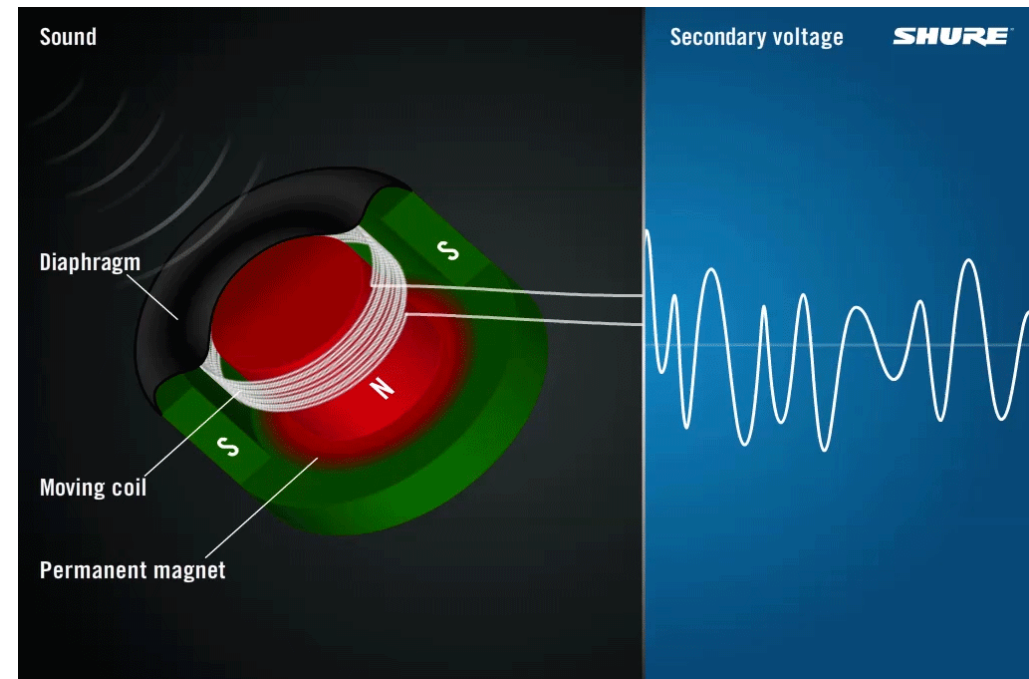
Condenser Microphones

- The elements use a conductive diaphragm and an electrically charged back-plate to form a sound-sensitive "condenser" (capacitor).

- Sound waves move the diaphragm in an electric field to create the electrical signal.

- All condensers have active electronic circuitry called the preamp, either built into the microphone or in a separate pack.

- Condenser microphones require phantom power or a battery to operate.
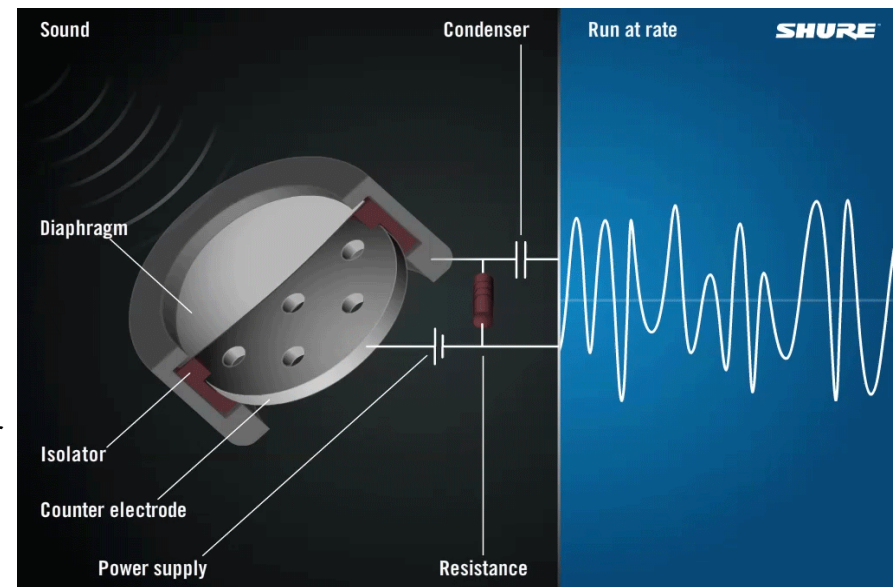
Condenser Microphones

▶ Advantages:

  ▶ Best overall frequency response makes this the microphone of choice for many recording applications.

▶ Disadvantages:

  ▶ More Expensive

  ▶ May pop and crack when close miked

  ▶ Requires a battery or external power supply.

AKG

C 3000 B

Ribbon Microphones

▶ A thin aluminum ribbon is suspended within a magnetic field and moves when hit by sound waves.

▶ Like a dynamic microphone, the movement creates an electrical signal.

▶ Advantages:

　▶ Adds "warmth" to the tone by accenting lows when close-miked.

▶ Disadvantages:

　▶ Accenting lows sometimes produces "boomy" bass.

　▶ Very susceptible to wind noise.

　▶ Not suitable for outside use unless very well shielded

　▶ Expensive

Phantom Power

Female   Male
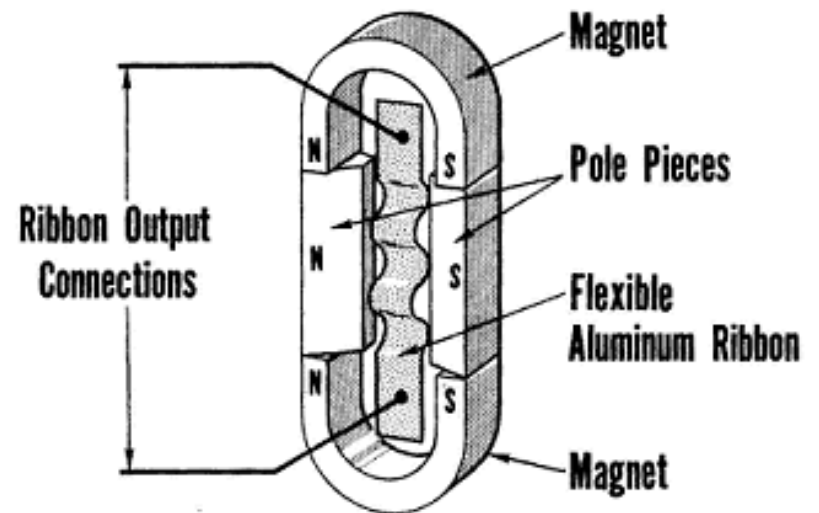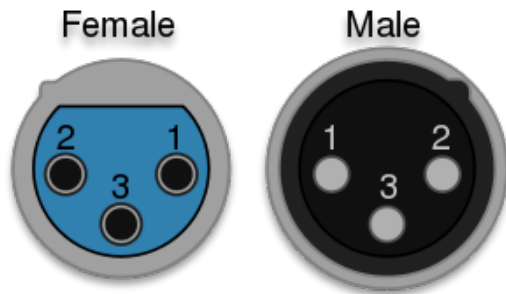
- A DC voltage (usually 12-48 volts) used to power the electronics of a condenser microphone.
- This voltage is supplied through the microphone cable by a mixer equipped with phantom power or battery.
- The voltage is equal on Pin 2 and Pin 3.
- For a 48 volt phantom source, Pin 2 is 48 VDC and Pin 3 is 48 VDC.
- Pin 1 is the ground (shield).

Frequency Response

▶ Virtually all microphone manufacturers will list the frequency response of their microphones at a range from 20 - 20,000Hz.

▶ A microphone whose response is equal at all frequencies is said to have a "flat" frequency response.
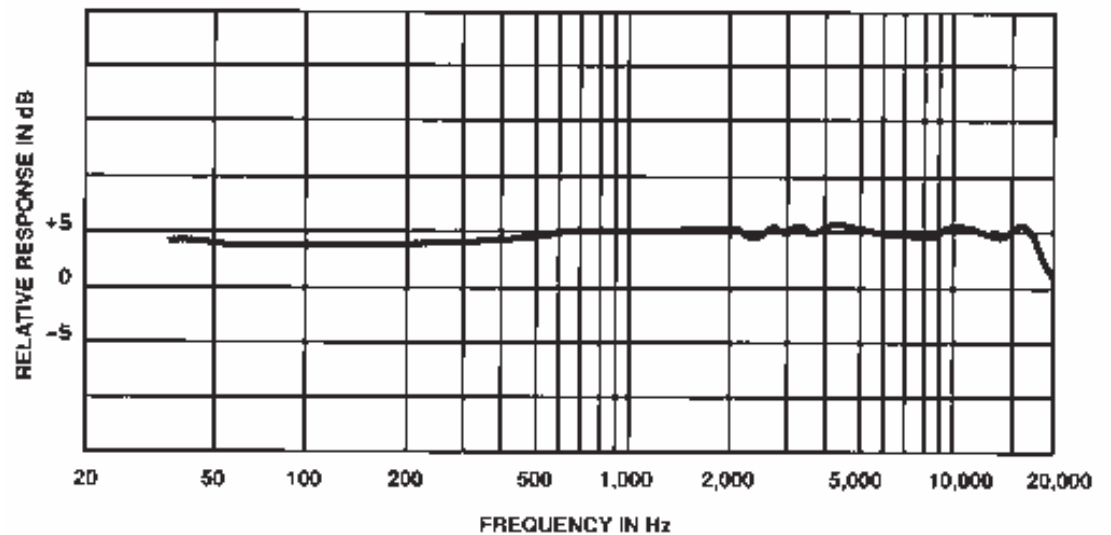
Frequency Response

- A microphone whose response has peaks or dips in certain frequency areas is said to have a "shaped" response.

- This response is designed to enhance a frequency range that is specific to a given sound source.

  - For example, a microphone may have a peak in the 2-10Khz range to enhance the presence of vocals.
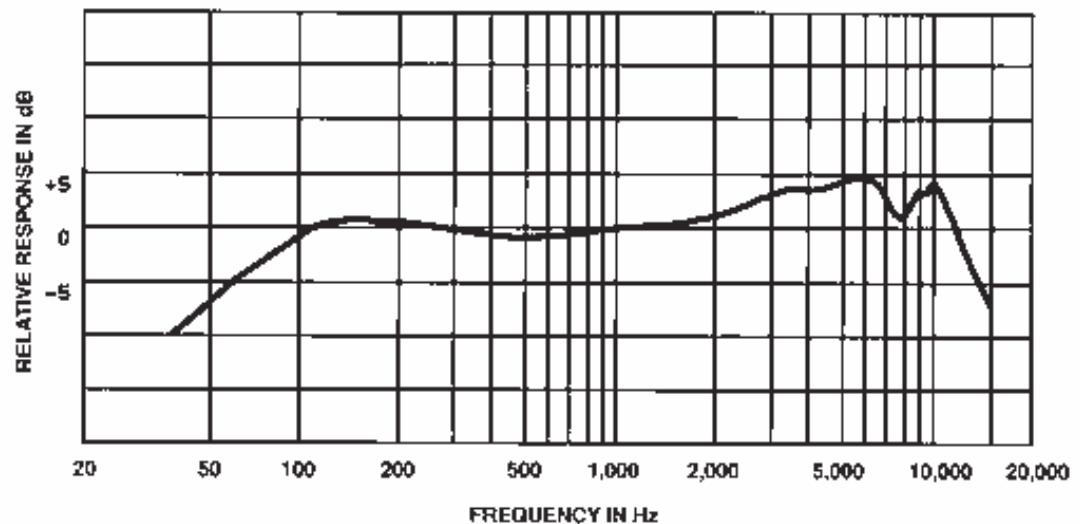
Frequency Response

- A microphone's response may also be reduced at other frequencies.

- One example of this is a low frequency roll-off to reduce unwanted "boominess."
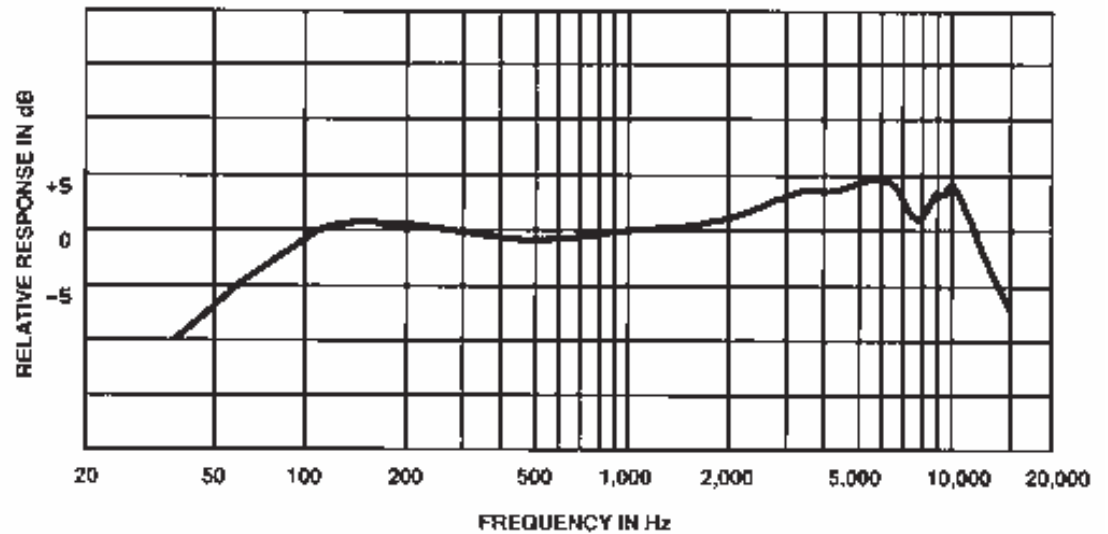
Directional or Not

Every microphone has a property known as *directionality*.

This describes the microphone's sensitivity to sound from various directions.

Omni-directional Response
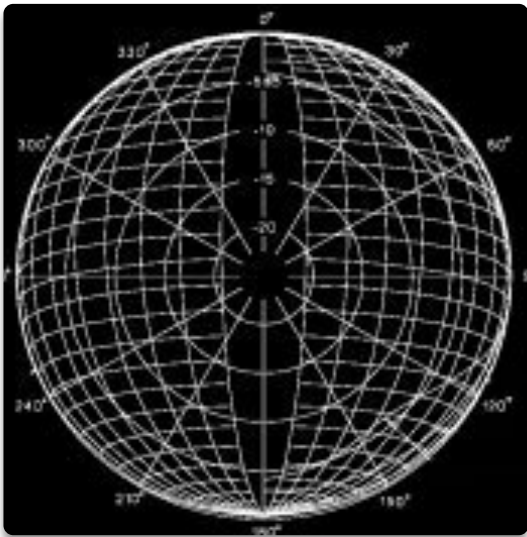
- Its "coverage" or pickup angle is a full 360 degrees.
- This type of microphone can be used if more room ambience is desired.

Unidirectional Response

- A microphone that is most sensitive to sound arriving from one particular direction and is less sensitive at other directions.

- They are used to isolate the desired on-axis sound from unwanted off-axis sound.

Directional Response

▶ Cardioid "Heart-shaped" Sound is picked up mostly from the front, but to a lesser extent the sides as well.

▶ The cardioid mic picks up only about one-third as much ambient sound as an omni.
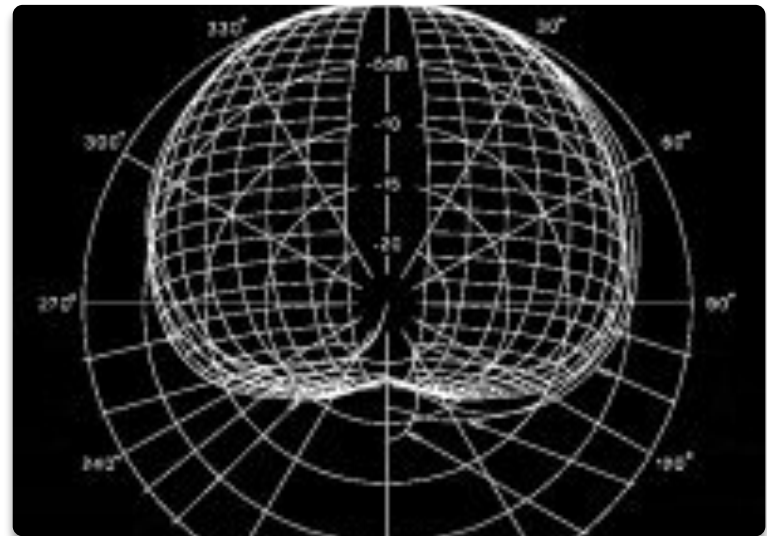
Variations of Unidirectional Mics

- Supercardioid and hypercardioid.

- Both patterns offer narrower front pickup angles than the cardioid.

- 115 degrees for the Supercardioid and

- 105 degrees for the hypercardioid.

CARDIOID | HYPERCARDIOID | SUPERCARDIOID
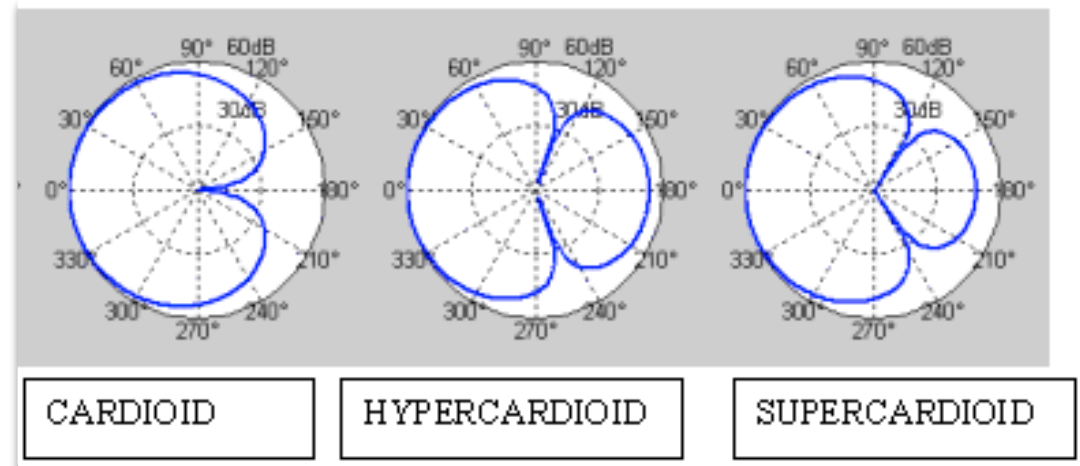
The Audio Interface - Mixer

- Converts the audio signal from the microphone into a digital signal for the computer.

- Provides phantom power for condenser microphones.

- Focusrite Scarlett 2i4 USB Audio Interface ca. $180.00

GEAR

Microphones and Instruments

Mixer

Amplifier

Speakers

Cables/Snake

Cables/Snake

Cables
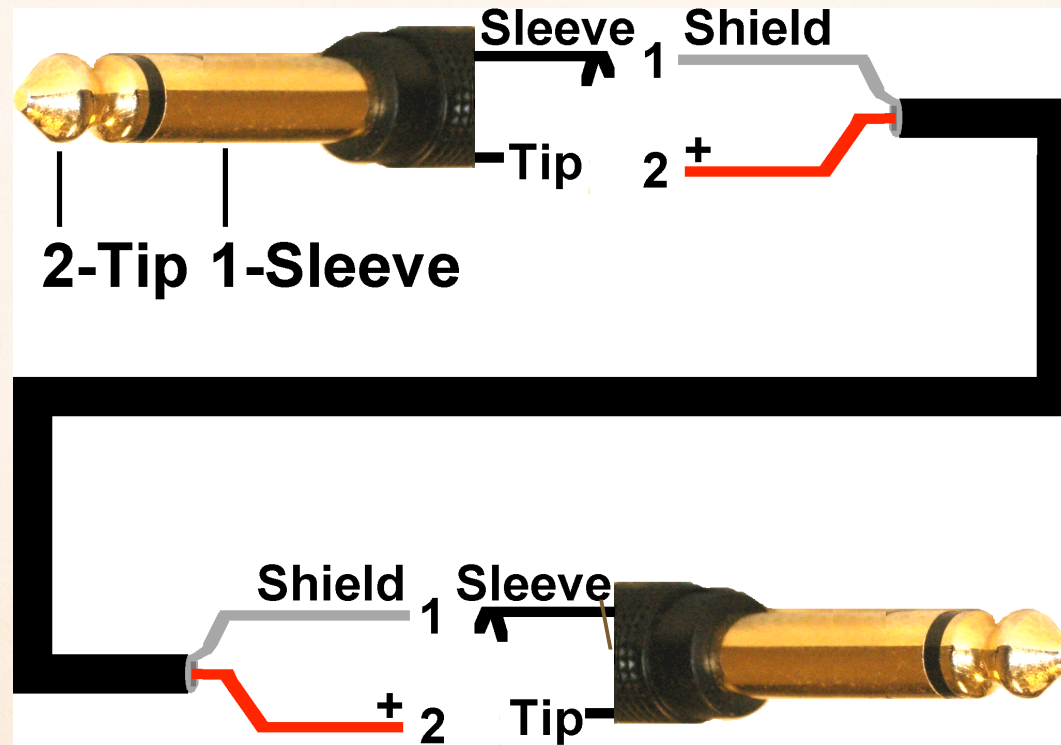
GEAR

GEAR

Cables

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

GEAR
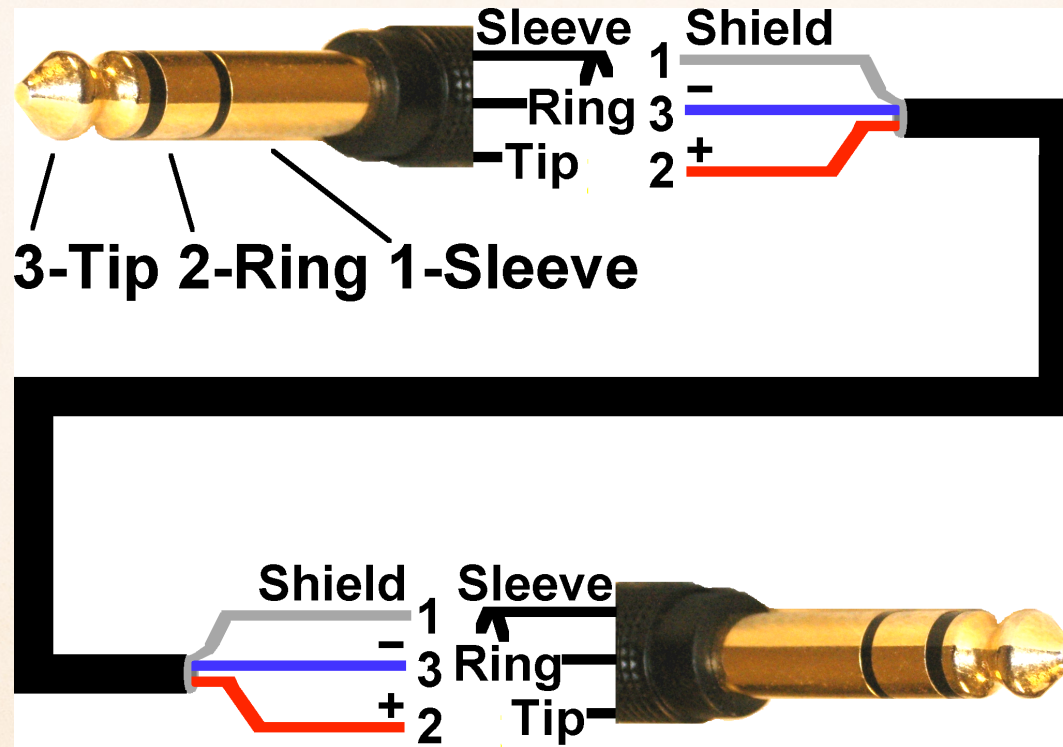
1/4" TRS for Balanced Lines and Stereo Equipment

GEAR
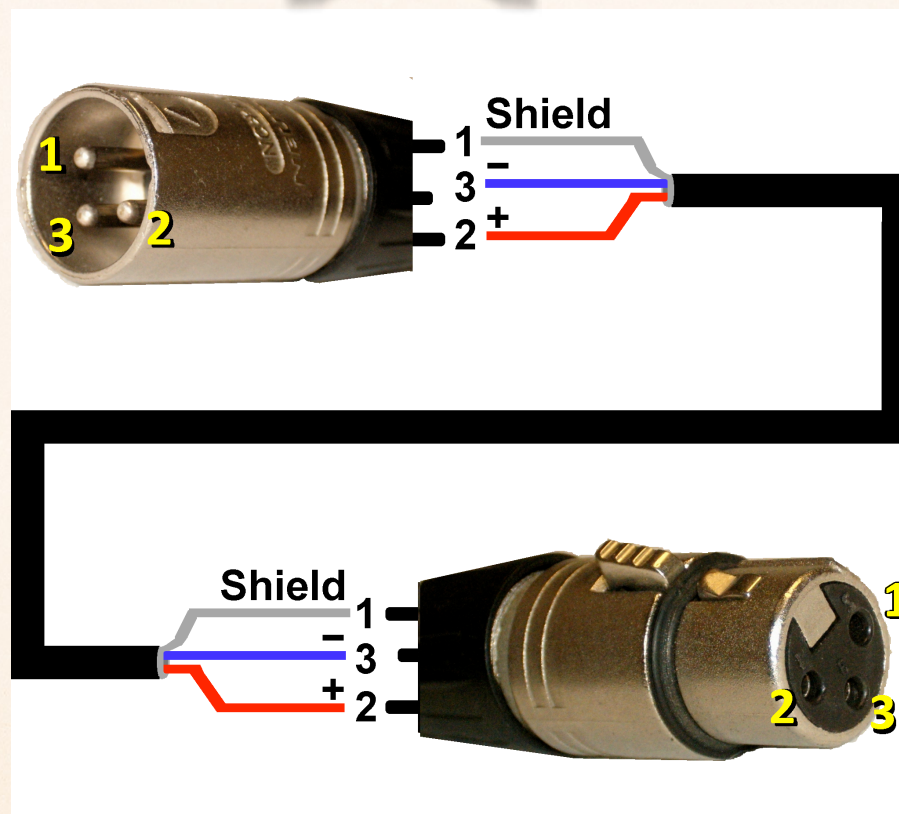
XLR for Microphones

GEAR

Cables

Left Right Video
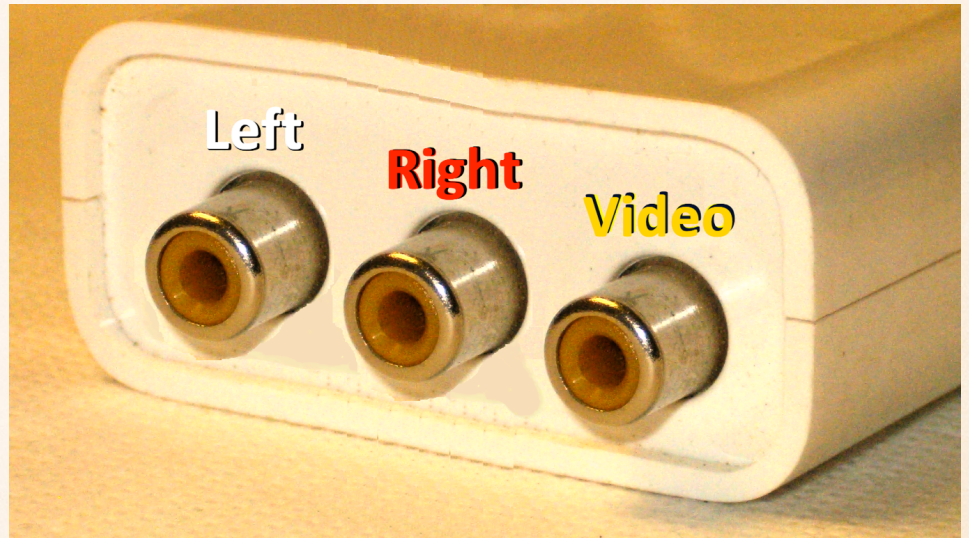
RCA Cables primarily for CD and DVD players, tape recorders

GEAR

Instruments/Direct Boxes

GEAR

Snake
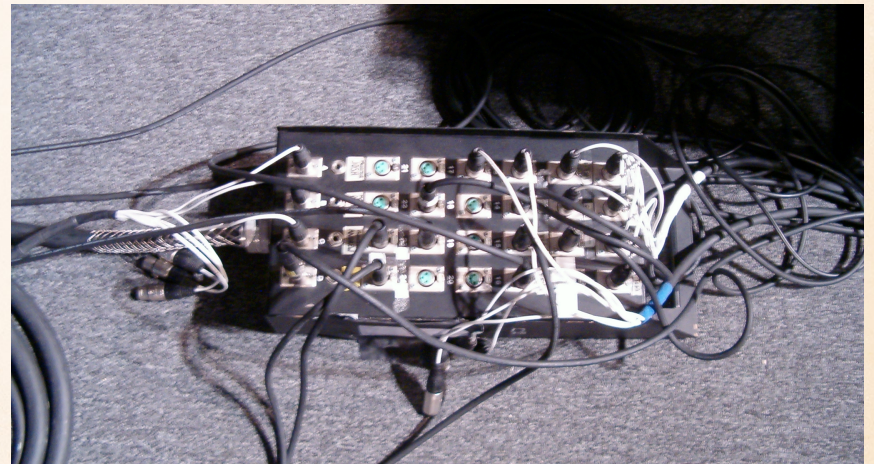
GEAR

Microphones and Instruments

Mixer

Amplifier

Speakers

Cables/Snake

Cables/Snake

Cables

GEAR

Mixer - Allen and Heath iLive 112

GEAR

Mixer - Mackie SR 24-4-VLZ Pro
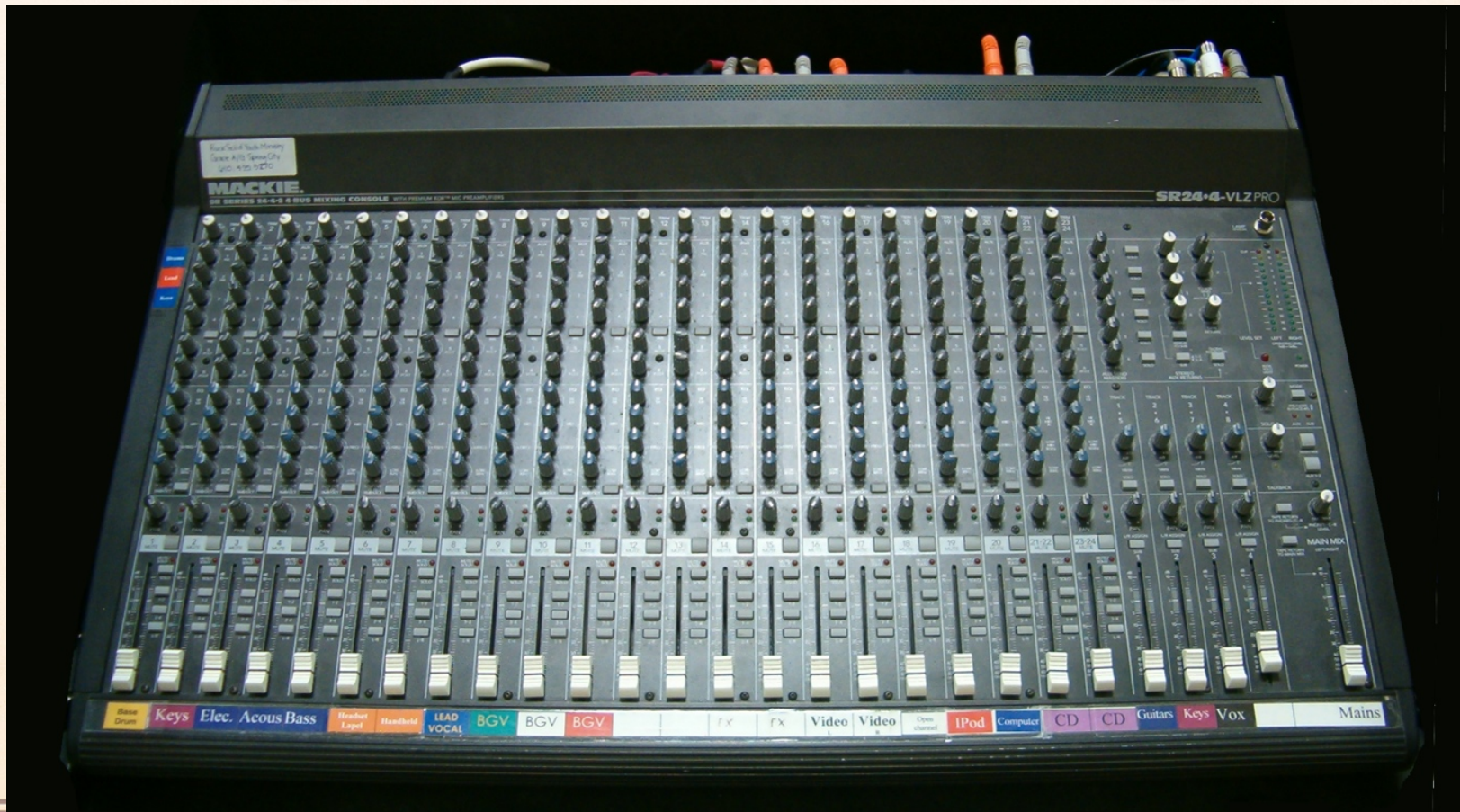
GEAR
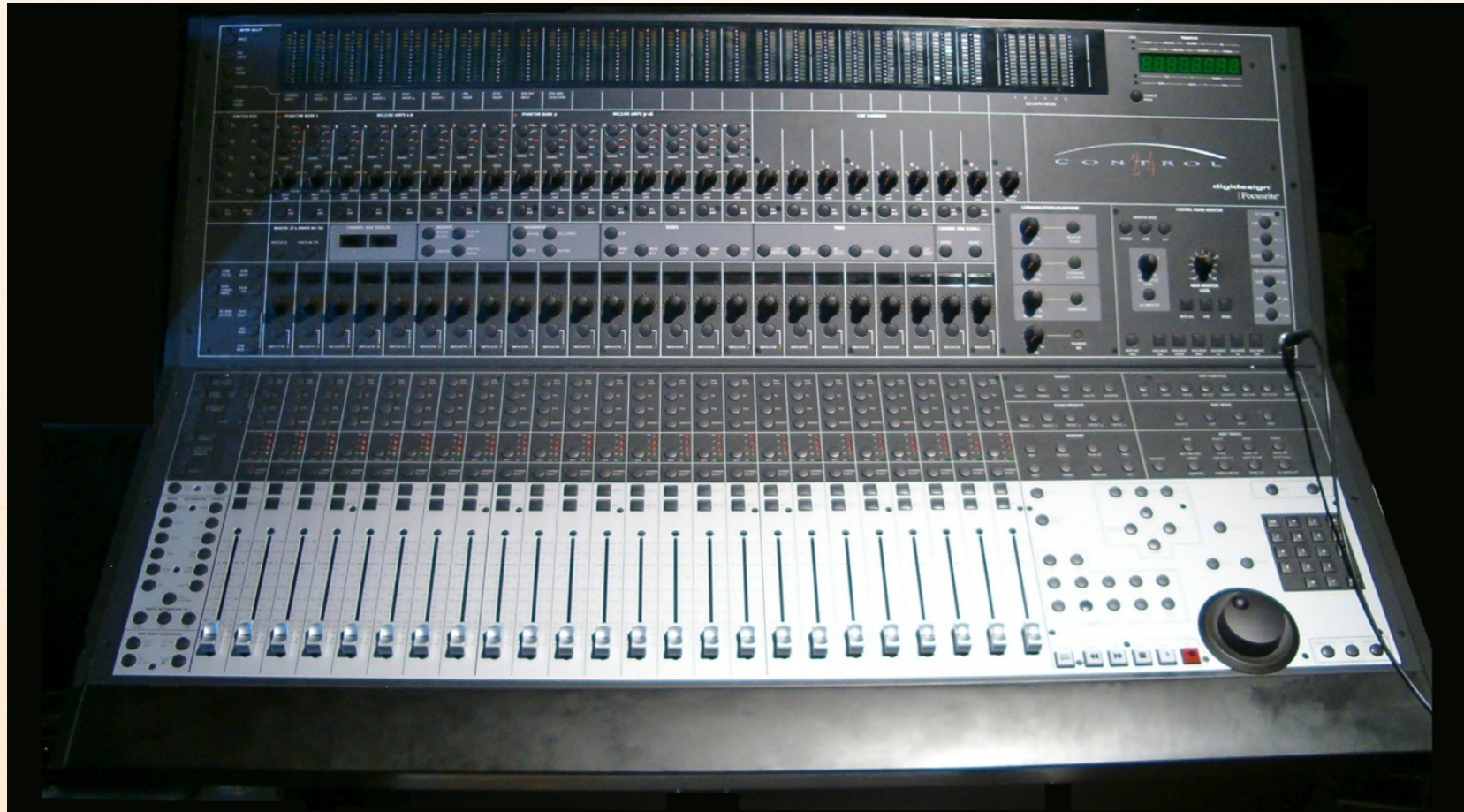
Mixer - Allen and Heath GL 3300

GEAR

Digital Mixer - Digidesign 8

GEAR

Digital Mixer - Digidesign Control 24

GEAR

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.

GEAR

Microphones and Instruments

Mixer

Amplifier

Speakers

Cables/Snake

Cables/Snake

Cables

GEAR

*Powered Speakers
(Amplifier and Speakers)*

GEAR

Amplifiers

GEAR

Microphones and Instruments

Mixer

Amplifier

Speakers

Cables/Snake

Cables/Snake

Cables

GEAR

Speakers

GEAR

Microphones and Instruments

Mixer

Amplifier

Speakers

Cables/Snake

Cables/Snake

Cables

Amplifier

Monitors

GEAR

Monitor Speakers
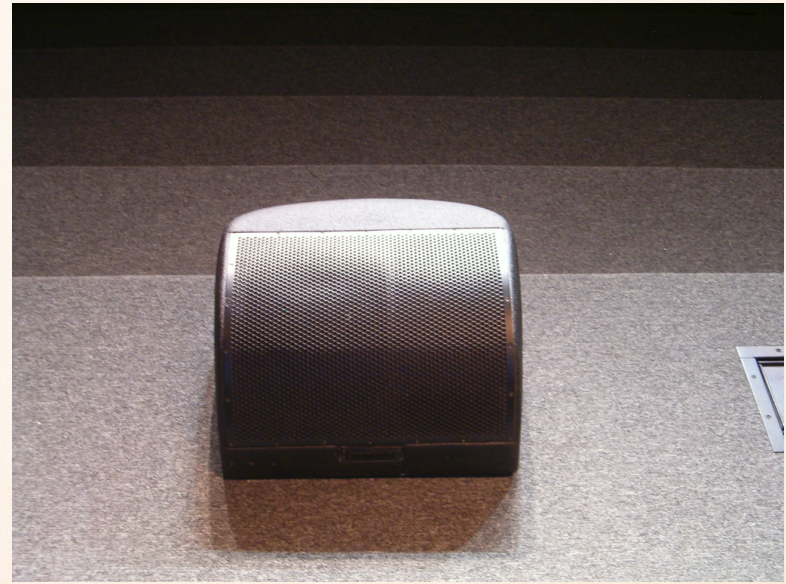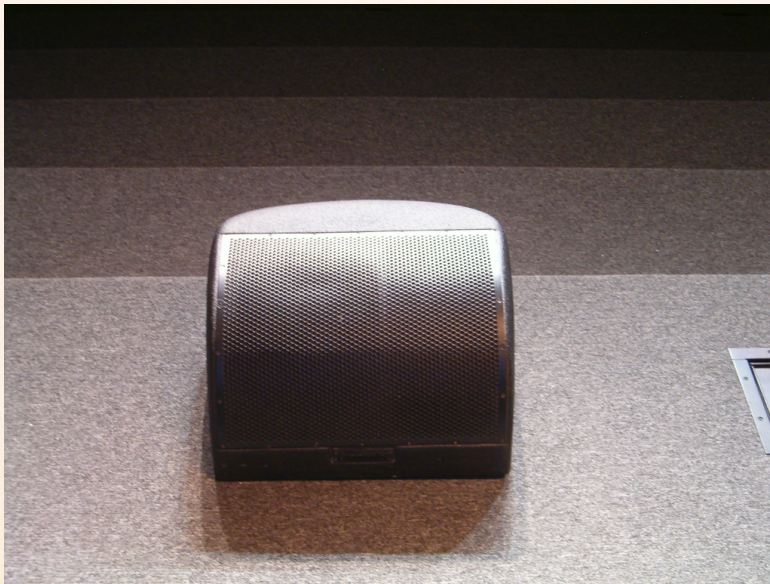
GEAR

Powered Speakers

GEAR

Powered Speakers

GEAR

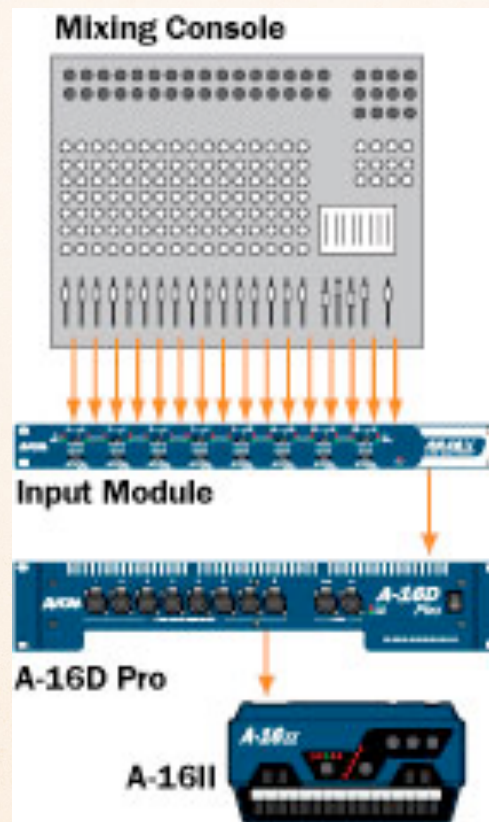Powered Speakers

GEAR

In Ear Monitors

GEAR

In Ear Monitors

GEAR

In Ear Monitors

GEAR

In Ear Monitors

GEAR
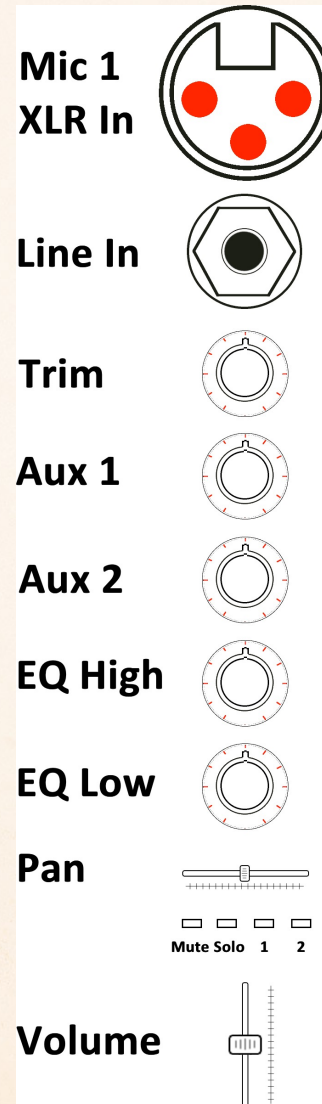
Microphones and Instruments

Mixer

Amplifier

Speakers

Cables/Snake

Cables/Snake

Cables

Amplifier

Monitors

MIXER - THE CHANNEL STRIP

Mic 1
XLR In

Line In

Trim

Aux 1

Aux 2

EQ High

EQ Low

Pan

Mute Solo   1   2

Volume

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 on channels for singing/speaking.

- **Compression** - Apply to channels which are subject to wide variations in levels, and especially to those which are often too-loud.

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.

OTHER INSTRUMENTS

Electric Guitar

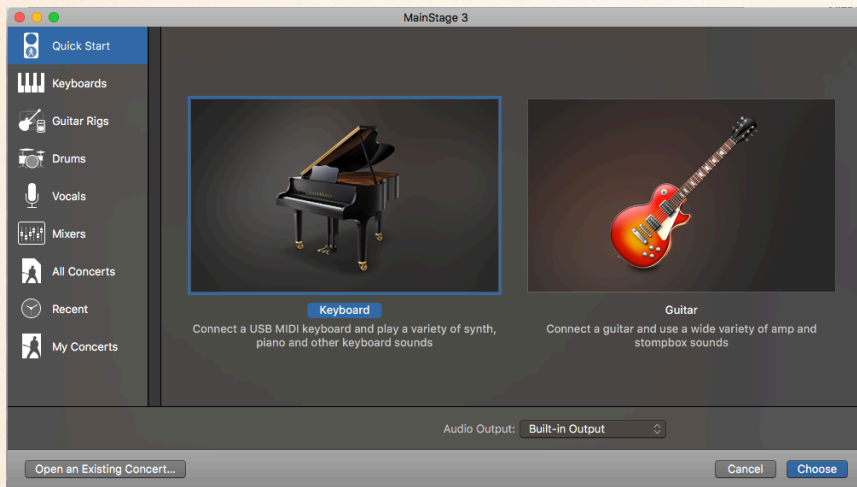Electric Bass

Acoustic Guitar

Electronic or MIDI Drums

MIDI Instruments

•EWI

•Violin

VIRTUAL INSTRUMENTS

Mainstage

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

Kontact

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

SOUND REINFORCEMENT MANUFACTURERS - MICROPHONES

- Shure
- Sennheiser
- Electrovoice
- Audix
- Neumman
- Beyer Dynamic

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

SOUND REINFORCEMENT MANUFACTURERS - MIXERS

- Presonus
- Mackie
- Allen and Heath
- Peavey
- Yamaha
- Taft
- Carvin
- Avid
- Behringer (Midas)
- Digico
- SSL

SOUND REINFORCEMENT MANUFACTURERS - SPEAKERS

- Mackie
- M-Audio
- JBL
- Peavey
- Fender
- Fishman
- Bose
- Yamaha
- Meyer Sound
- L Acoustics
- D&B

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

DEALERS

- Romeo

- Soundtree

- Sweetwater

- Musician's Friend

- Sam Ash

- Guitar Center

- Woodwind/Brasswind

- ProAudio

- B&H Photo

- Full Compass

Software

Audacity - Free, good for straight capture and multi-track recording, destructive editing, no MIDI, instruments or loops.
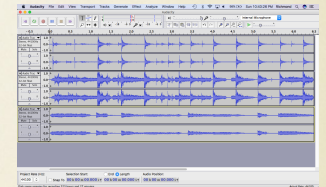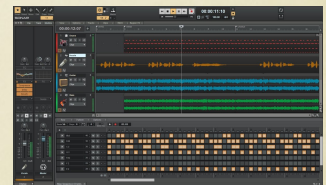
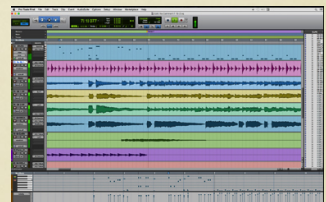**GarageBand** - Free, for Mac only. Best interface in the business, but hides complexity/power. Extensive loops.
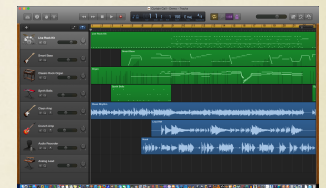
MixCraft - Modeled after GarageBand interface, Windows only, Great collection of loops. Educational discounts!

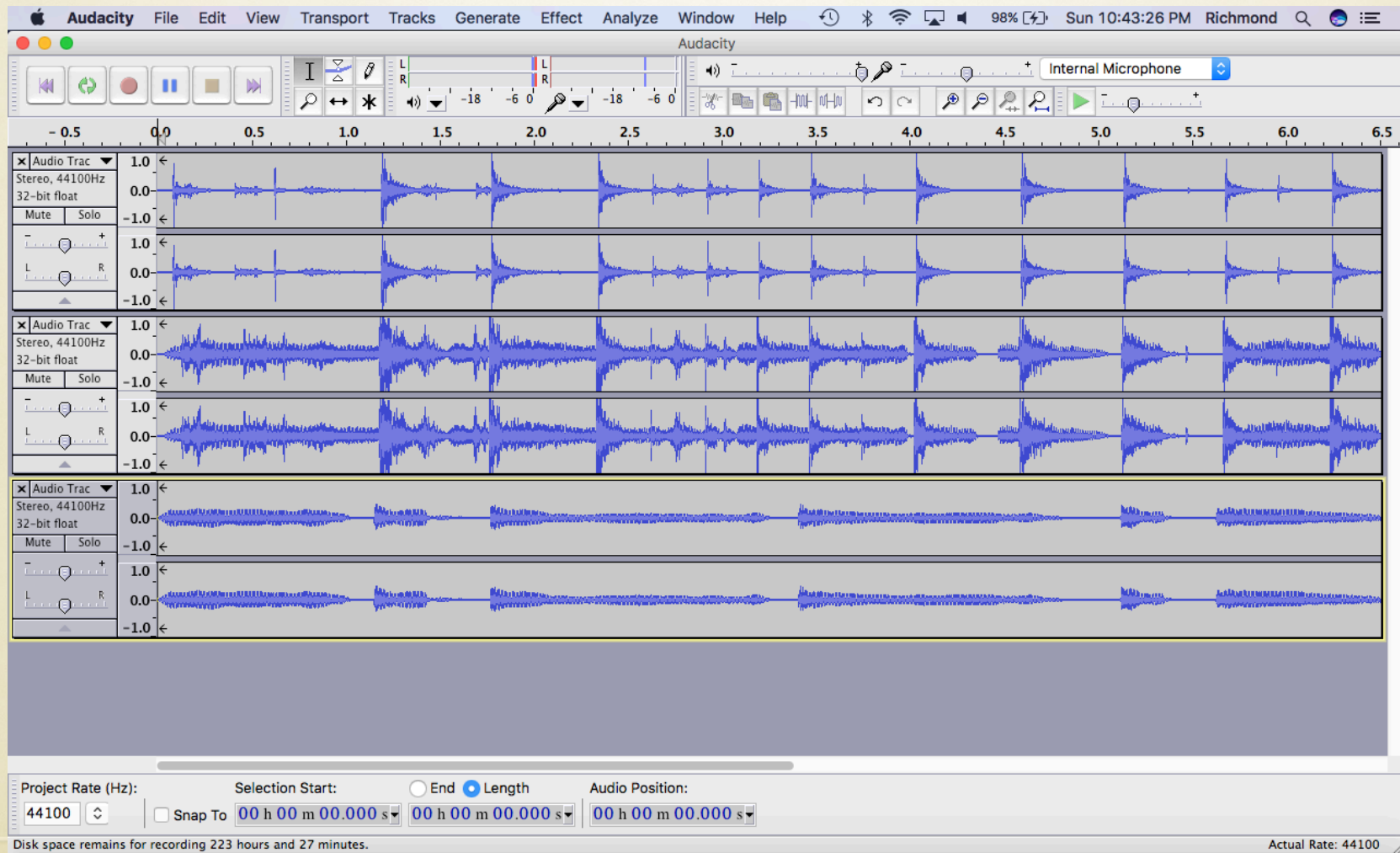**Cakewalk** - Free, formerly a commercial product. Windows only.

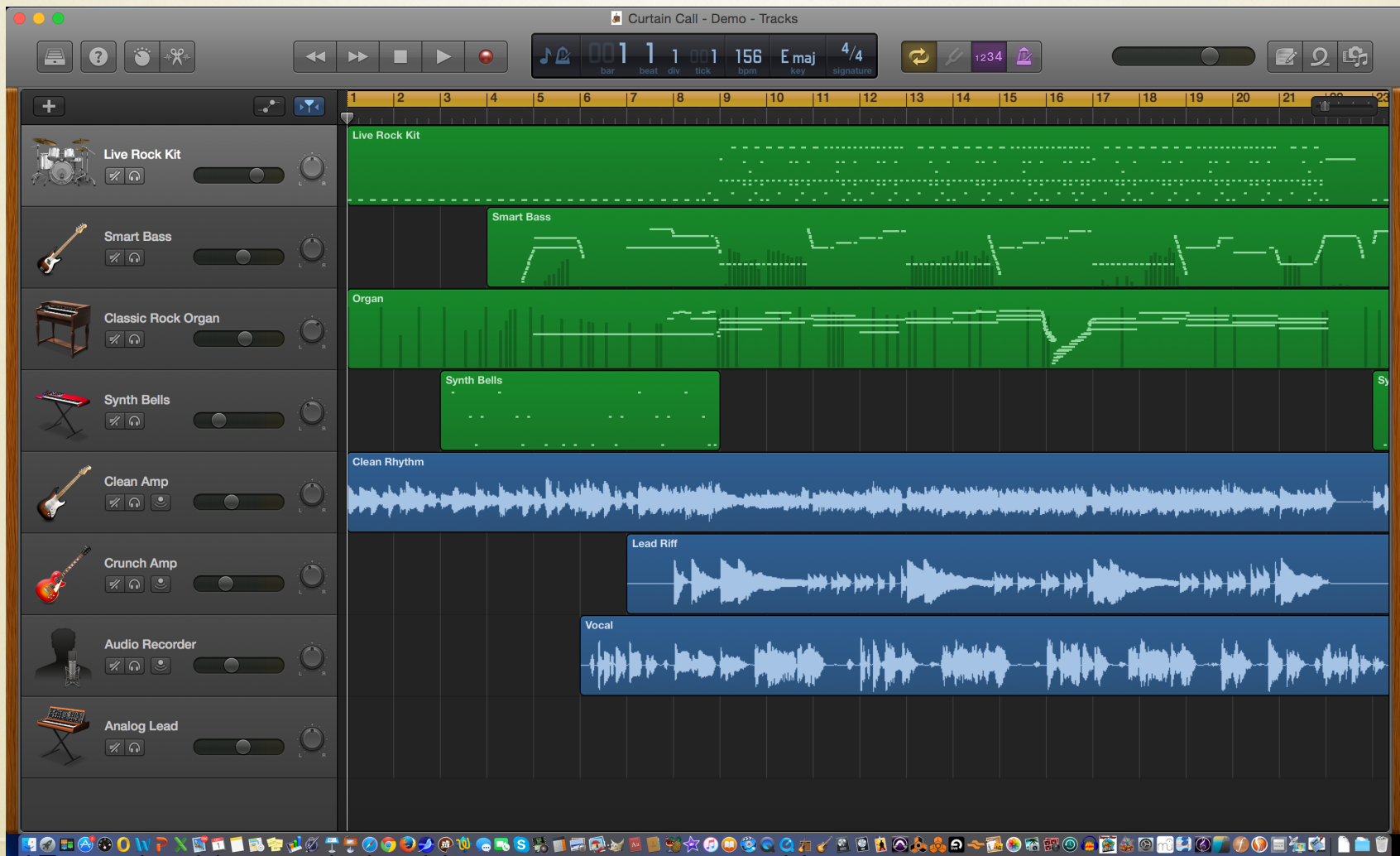**ProTools First** - Free, Like ProTools, but limited tracks and songs in the cloud.

Software

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

Software

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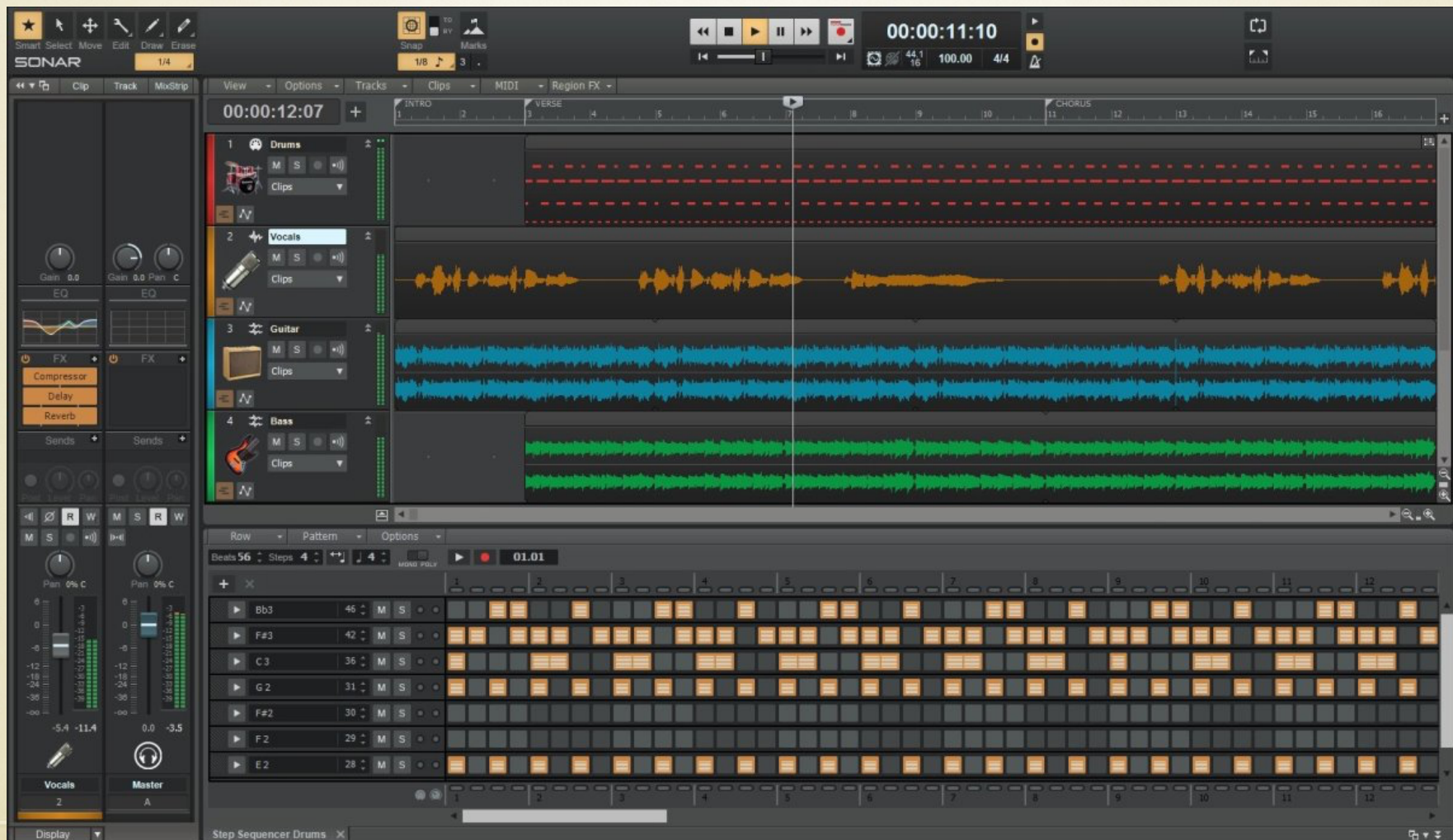
Software

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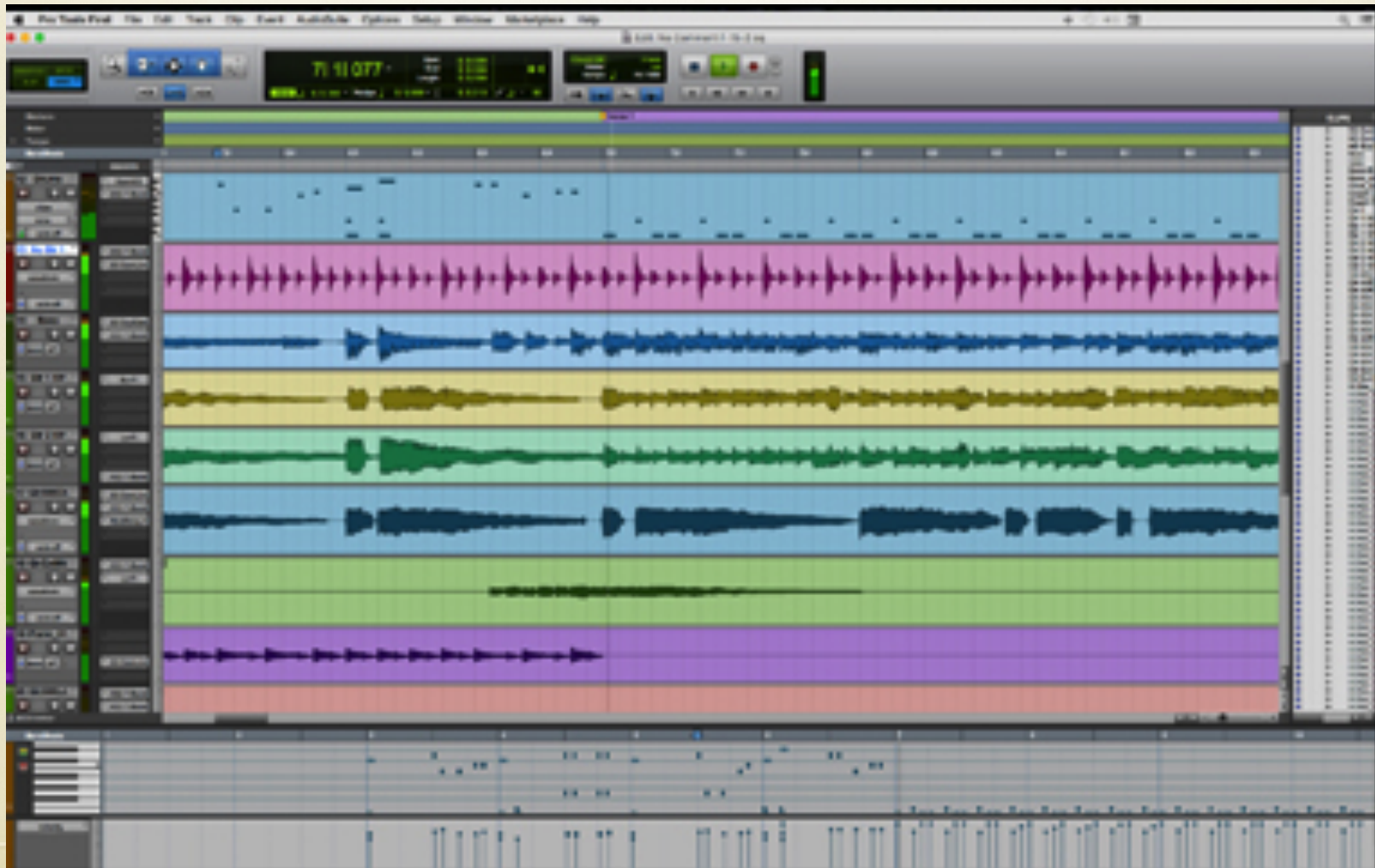
Software

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

Software

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

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?
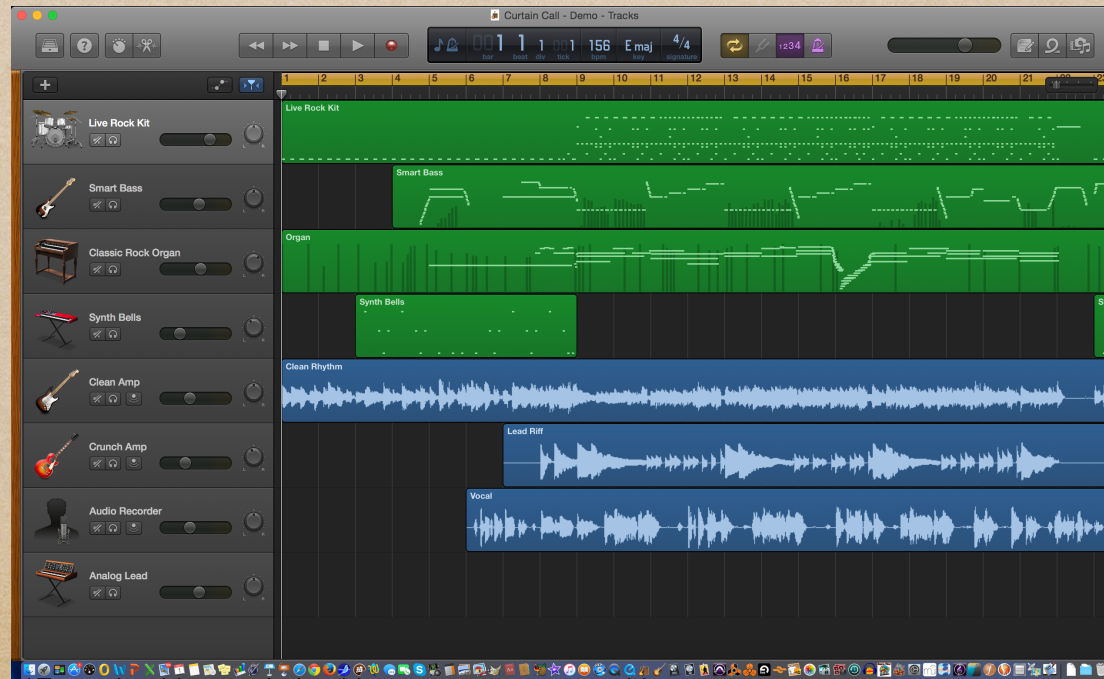
Bibliography

- http://www.alfred.com/LearningGarageBand

Teaching Idea

- Open a Demo Song

- Describe the tracks used in the song

Quickstart 1

- ◆ Open a Demo Song

- ◆ Record a new vocal track
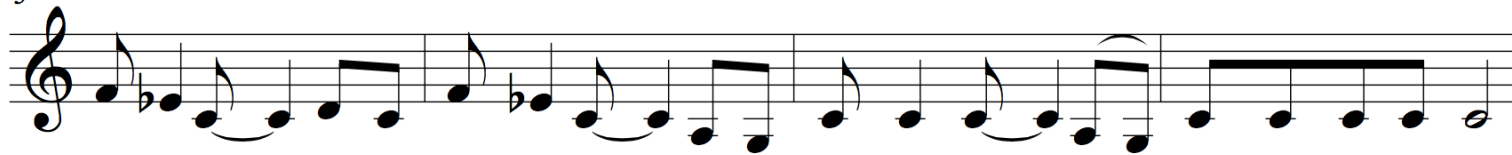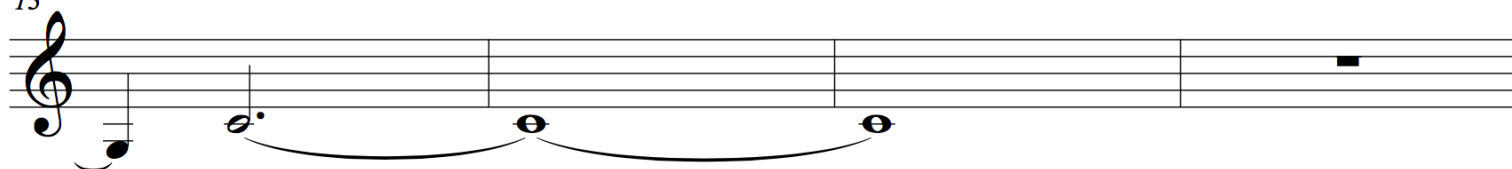
Quickstart 2

- Create a Song Using Only Loops

  - Search "Cuban"

  - Arrange as shown.

Cuban Song
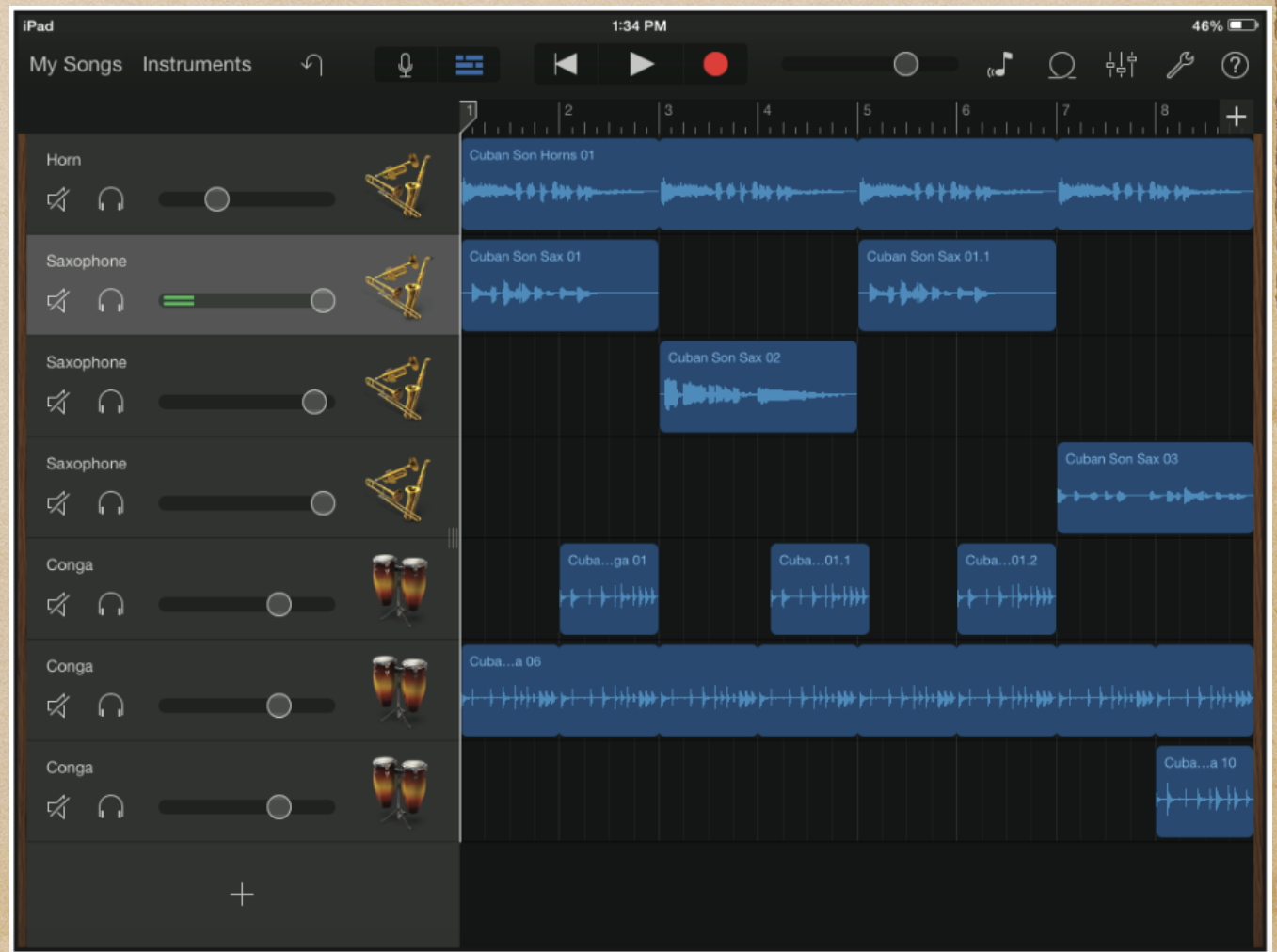
Teaching Idea

- Record a Rap
  - Search Hip Hop
  - Arrange as shown.

Quickstart 3

- Playing and Recording Garageband's Instruments and Smart Instruments

- Keyboard

- Guitar

- Bass

- Strings

- Drum Set

Additional Teaching Activities

- From chapter 13

Additional Teaching Activities

- 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 https://youtu.be/mpjEyBKSfJQ.

- Record an entire program for a radio broadcast. Write the dialogue for the drama. Write a score for the musical background.

Additional Teaching Activities

- 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

Additional Teaching Activities

- 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.

Additional Teaching Activities

- 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.

Additional Teaching Activities

- 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.

Additional Teaching Activities

- 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.

Additional Teaching Activities

- 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

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Tarleton State University Texas A&M University System Founding Member

100+
Programs of Study

120
Year Old Institution

13,226
Students Enrolled

Tarleton State University

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Tarleton State University

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Tarleton State University

Tarleton State University

Starting a Production Class In Middle and High School

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FMEA
5:15P, January 10, 2020
http://floydrichmond.com/fmea2020

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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

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University of Valley Forge (15 years)

Boston University (2 years)

Five Towns College (5 years)

Pinellas County School District (11 years)

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    Edited and wrote TI:ME Certification Courses
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    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

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Composer and Arranger

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