FULL STEAM AHEAD

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Resources

Make sure to visit https://www.lorenz.com/resources/steam to access dozens of supporting visuals and worksheets.

FIRST STEPS

Build a Recording Studio

Providing a recording studio in a music room can create a bustle of excitement around creation. Students find the space novel and fun, and value the improvement of sound a recording studio can offer when making recordings. Creating a recording studio (or several small ones) for your classroom is a great way to remind you and your students to create. Sometimes we build a new space without knowing entirely how we will use the space. Together you and your students will find ways to incorporate the studio in the music classroom. If you build it, your students will help you find ways to collaborate and put it to good use.

Materials

Makerspace	Cardboard box, scissors, stapler, marker, duct tape, mattress pad (1-1/4" 5-zone foam), fabric or wrapping paper (optional)
Hardware	Laptop, USB microphone, headphones, speakers, LED lightbox sign (optional)
Download	Instructions

Process

1. Find a sturdy box that is the right size for your space. A medium-sized moving box or empty printer-paper box will be just right.

2. Cut off the flaps.

3. Measure the sides of the box, mark the measurements on the foam mattress pad with a marker and cut.

4. Staple the foam inside the box.

5. To help reinforce the corners of your box, duct tape the sides together once all the foam is stapled inside the box.

6. Duct tape the fabric around the box. Leave a little bit of fabric over the edges for a nice finish.

7. Fold the fabric over the front edges onto the foam and staple.

8. Cut a small hole on the side of the box for cords.

9. Put together the Live Recording Studio lighted sign (optional).

10. Consider supplying your new recording studio with a USB microphone, headphones, speakers, and laptop if they are available.

Using Your Recording Studio

- Create a Kindness Skit Lesson (pg. 27)
- When ready, have a small group record a short performance in the studio for a final product.
- Record a whole class performance in the music room but have the melody or vocals stand near the recording studio to create a balanced recording.
- Invite a few students in each music class to record a short reflection of their learning.

Completed Studio

Activity 3
Choreography

Objective

Students will choreograph a dance in elemental form that represents a particular character.

Materials

Recordings	"Entertainer" by Scott Joplin, "Abandon" from Walt Hampton's *Hot Marimba* (or similar)
Downloads	Slide Show, Ballots, Elemental Forms Poster, Movement Vocabulary Poster

Preparation

Download, print, and cut ballots, one per student, or prepare a Google Form to collect votes.

Download The Joey Awards Slide Show.

Download and print or display the Elemental Forms and Movement Vocabulary Posters.

Open links to the recommended videos or select your own.

Process

1. Use Slide 3 from the Slide Show to explain how choreography works.

2. Choreographers have a strong dance background themselves, so before selecting a choreographer students must have a dance background, too.

3. Use the Movement Vocabulary Poster to discuss a variety of movement possibilities. (If you already have a movement word wall, use that since your students will already be familiar with it.)

CODING

Explore Electricity with Makey Makey

Identifying Conductors and Insulators

Grades 3+

Focus: Explore a variety of materials to determine which conduct electricity; learn to set up and use a Makey Makey kit.
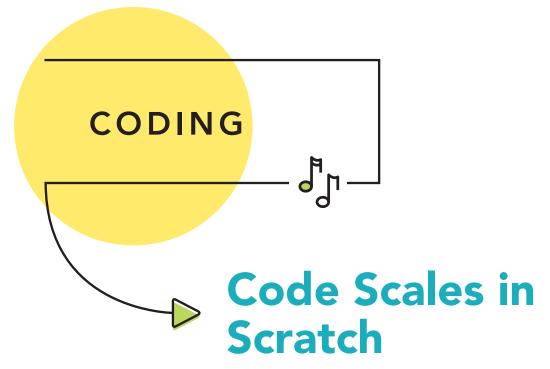
Aligning the Standards

NGSS Planning and carrying out investigations.

ISTE Innovative Designer

Math Make sense of problems and persevere in solving them.

NCAS Creating: Generate and conceptualize artistic ideas and work.

Materials

Makerspace	Variety of materials, some of which will conduct electricity (Play-Doh, paperclips, metal spoons, fruit) and some of which will not conduct electricity (straws, cardboard, plastic spoons, ketchup pouches, pencils), containers to hold the materials (one per group)
Hardware	Laptop or iPad (1 per group), lightning to USB adapters if using iPad Makey Makey kits (1 per group)
Website	Makey Makey Piano (https://apps.makeymakey.com/piano/)
Download	Conductor vs. Insulator Worksheet
Tutorial	Setting Up a Makey Makey for Computer or iPad

Makey Makey Piano

Full STEAM Ahead YouTube Playlist

CODING

Code Scales in Scratch

Working with Major and Minor Pentascales

Grades 3+

Focus: Students explore and build scale structure through the use of Scratch, a coding program.

Aligning the Standards

NGSS   Using mathematics and computational thinking.

ISTE   Knowledge Constructor

Math   Use appropriate tools strategically.

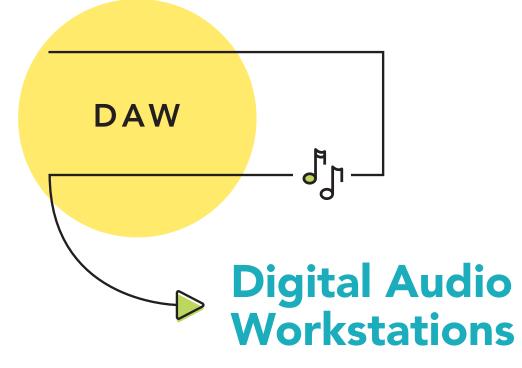**NCAS**   Creating: Organize and develop artistic ideas and work.

Materials

Book	*Good News Bad News* by Jeff Mack
Instruments	Pitched instruments (Orff or Boomwhackers™)
Hardware	Laptops or iPads (1 per group), lightning to USB adapters if using iPad, Makey Makey kits (1 per group)
Website	Scratch (https://scratch.mit.edu/)
Download	Slide Show
Tutorial	Coding a Scale in Scratch

Scratch

Full STEAM Ahead YouTube Playlist

DAW

Digital Audio Workstations

A digital audio workstation, or DAW, is a device or software used to compose, edit, record, and produce audio files. This sophisticated technology helps redefine composition for young composers. With melodic, harmonic, and rhythmic loops at their fingertips, they can layer and manipulate sound without having to know all the ins and outs of music theory. Children can compose with elements of music such as form, texture, or dynamics while feeling accomplished and satisfied with a final product that is easy to share with others. This section will give you a handful of projects to try with your students that engages them in the creative process.

GarageBand Scavenger Hunt

Finding Your Way Around GarageBand

Grades 3+

Focus: Students will learn to navigate the features of GarageBand through discovery.

This is a great introductory lesson for GarageBand on the iPad because it requires almost no preparation and allows students time to play and discover. There are lots of buttons and instruments to try and this activity gives students the chance to get that out of their system while also looking for specific tools they will need later on. Letting them find something no one else has found gives them some investment and ownership in the activity if they are somewhat out of their element. Spending time discussing the tools at their fingertips also helps reinforce tools composers have at hand when creating a new piece. While this lesson is written for the iPad, it can work for any DAW or on a laptop with only minor adjustments to the worksheet. (For example, there are no Live Loops, bending strings, or autoplay on the laptop version of GarageBand.)