

STEAM in the Elementary Music Classroom

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STEAM in the PreK Music Classroom

At the beginning of the school year, the first music classes I had with the PreK were ones during which they explored the four families of classroom percussion instruments: woods, drums, shakers, and metals. Our first family was woods. The students experienced how the wooden classroom instruments, such as sand blocks, wood blocks, rhythm sticks, clappers, and guiros, made short sounds, were all made out of wood, could be played in a variety of ways, and more. When the students explored the sand blocks, they noted to me how “scratchy” the sand blocks felt and how you could clap or rub them. This prompted me to tell the PreK students to ask Mrs. Santos if she had sandpaper in her classroom to explore further.

When this particular PreK class went to Mrs. Santos’s classroom a few days later, one student immediately asked her: “Mrs. Santos, do you have sandpaper in the Studio?” When she showed them the sandpaper, another student asked, “How do they turn out as instruments?” As Mrs. Santos listened further, she was able to prompt them, which produced more questions. The conversation documented by the teacher, went like this:

- “Maybe we can start with [these children] and me.” (The student points to each of her friends as she lists who will be involved in the project to begin.)
- “I’m making a list.”
- “They had handles and when we clapped them or rubbed them they made different sounds.” (Referring to the instrument they were exploring with Mrs. Burns.)
- “I forgot how to spell ‘red’. How do you spell red?” (This student wants to paint her instrument red and would like to write it down. The teacher helps her sound out the word and she is able to match the sound to the correct letter.)
- “I made a rectangle.”
- “I think we can wrap paper around (the sand blocks).”
- “I want to paint them with glue and sandpaper.”
- “I’m adding a lot of blue because my sister likes blue.”
- “I like blue and red. I’m going to mix the blue on the red.”
- “I want mine just purple.”
- “Can I put some pink on top of the purple?”

As the students were deciding how to make the instrument, they also sketched a design of their instrument and selected materials to use to create the instrument. Mrs. Santos had blocks for the students to use to help this process. Finally, they used materials, such as paint, to decorate their newly created sand blocks.

While in music class, the students learned about the traditional concept of percussion families, in the Studio, students extended their interest in and explored the composition of the percussion instruments.

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STEM to STEAM

3rd Grade Music Classes:

In the spring of 2014, Jen Wagar (Far Hills science teacher) and I collaborated on a STEAM project that involved third graders using recycled materials to create instruments that they would use to perform their two-part compositions. In science and music classes, the students learned about sound, pitch, sound waves, vibrations, instrumental materials, and ensembles such as the New York Philharmonic, the FHCDS Philharmonic, and the ArtEco Band. This helped them discover how to make a working instrument that could produce sound and pitches with recycled materials. They also used their knowledge of composition to compose a melody using the notes G A and B on the treble clef staff using quarter, eighth, half, and whole notes. To add another element of integration, the students wrote lyrics to their melodies using facts they learned from their "Adventure America" social studies unit.

At the end of the unit, the students performed their songs using recorders, hand-made guitars, and hand-made drums.



A 3rd grader creating bongos from recycled materials.



A 3rd grader composing a song titled "Maine" that her classmates will perform.



3rd graders testing pitch using water and beakers.



3rd graders testing pitch using water and beakers.

At <http://www.amymburns.com> (click on Cross-Curricular Activities) you will find more info. If you scan this QR code, you can read about the entire project from an article that was published in *Independent Teacher* in the Fall of 2016.



Sound Shape drums and STEAM by Cherie Herring (www.cphmusic.net)

During a STEM unit on sound waves and energy, music students were challenged to design a support for multiple Sound Shape hand drums. The support had to be hands-free without changing the original vibration. Students imagined, drew plans, labeled structural features, made a supplies list, created, tested, and improved their structure during the engineering design process. Students then composed and notated a piece that used at least three different size drums. Link to Sound Shape hand drums:

<https://www.amazon.com/REMO-SOUND-SHAPES-Circles-Multi-Color/dp/B0002EB5Y4>



[Amazon.com: REMO SOUND SHAPES, Circles, 6"/8"/10"/12"/14 ...](https://www.amazon.com/REMO-SOUND-SHAPES-Circles-Multi-Color/dp/B0002EB5Y4)

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Buy REMO SOUND SHAPES, Circles, 6"/8"/10"/12"/14"/16", Multi-Color: Drums & Percussion - Amazon.com FREE DELIVERY possible on eligible purchases

Snow Day Video

During two to four of our music classes this past month, the students in grades PreK through 4 achieved our national standards of creating, performing, responding, and connecting to music through creating our Snow Day Video.

What they achieved at various levels with teacher guidance, since the project ranged from PreK-4th grade:

- Solving a school problem that we had no snow day video for the 17-18 school year.
- Using a thinking map to chart ideas on what we do to secure a snow day.
- Experiencing the form of the song Happy by Pharrell and identifying that it has verses, choruses, and two bridges.
- Using the ideas from the thinking map to create new words to the song, Happy, by Pharrell. Learning, singing, and performing their portions of the song.
- The older singers sang the verses and choruses and performed on the instruments. The younger singers sang the bridges. Recording the vocal track using Soundtrap (soundtrap.com).
- Experiencing how to create a video with a green screen and the iOS DoInk app. They loved filming as if they were outside or there was a snow boarder jumping over them.
- Learning basic editing features such as mixing video and audio together.
- Discovering that music artists experience the same process when creating a music video. They were also surprised to find out that the artists have to lip-sync in the videos to their audio tracks. Experiencing some rhythm patterns to add to the instrument breakout session.
- Creating ideas for the video. For example, many felt that the music teddy bears needed to be in the video since they are apart of the music classroom.
- Viewing and critiquing the versions of the video and giving more ideas on how to problem-solve issues. Such issues were:
 - Not enough footage to cover all of the times "pajamas" appears in the music, so some students brought in their pjs.
 - It was challenging at this time to animate fake ice cubes so we left them out.
 - The final class to film added the reporters because we had already extended the song to fit the footage and all of the students involved.
 - Some students had florescent green on their jackets, which caused those parts of the jackets to become invisible. They thought that it was a cool effect.

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