

# STEM TO STEAM: THE “A” STANDS FOR “THE ARTS”

*By Laurie Orth*

If the last several years and this pandemic have taught me anything, it is that things change. Not surprisingly, my concept of **teaching music has also changed**. I used to be content in my own little music silo, teaching general music and chorus. By accident, I brought the STEM subjects of space exploration and rockets into my music classroom, and I’ve been living the STEAM dream ever since. By combining these two contrasting disciplines, I have seen amazing positive responses in **my students as they simultaneously learn how to read music and learn about space and rockets**.

## WHAT IS STEM?

The STEM subjects of science, technology, engineering and mathematics take up a lot of bandwidth as our **education system seeks effective ways to prepare students for careers** that will help our country compete on a global scale. Sadly, music and arts programs have often taken a hit, sometimes being pushed aside, phased out, or moved to “extracurricular” categories, as if they are not as important as the STEM “Core” subjects. Nothing could be farther from the truth.

**Music education matters. The arts and humanities matter.**

## STEM TO STEAM

Instead of defending my music education career, I am now leveraging it by embracing collaboration with space educators, because **music can be used to teach anything**. I have added original, space-themed music that I composed to my general music curriculum with recorder and boom whacker music about rockets, solar wind and dwarf planets. This works because the **space themes spark students’ curiosity**; it gets their brain chemicals firing endorphins, oxytocin, dopamine and serotonin, allowing **students to fully engage in my music class**. I’ve found my way to add the “A” in our core curriculum for the arts and music: STEM to STEAM. **Assessing my new teaching method** sparked curiosity and led me to numerous articles about how the brain works, how humans learn, and how cross curriculum learning with arts integration and scaffolding subject matter is a more effective way to teach.

**Collaboration with my STEM faculty and administrator colleagues expanded everyone's concept about what music education means, and what it can do in the education of children.**

Today, I have a seat at the table where discussions that were once only about STEM, now include STEAM and the importance of music and the arts to educate the whole child.

## **STEAM AND MY SPACE JOURNEY**

My journey into space has been out of this world. I am a bonafide space aficionado and get a kick out of fun things like the ISS Spotter App and the NASA Selfie App. I have NASA ringtones on my phone, follow commercial rocket launches and watch them via live stream. I'm an active participant with fellow international space educators in the Space Foundation's Teacher Liaisons program, and a Space Station Ambassador with the Center for the Advancement of Science in Space, part of the International Space Station National Lab.

What I have come to love about space educators and space entrepreneurs is their **constant focus on the hope and possibilities in space innovation**. They **embrace unity and getting along** as a whole because "Space is hard." The space educator community is growing with the addition of music and arts educators like myself.

**They recognize the benefits of diversity that arts educators can bring to the field.**

## **FAST FORWARD**

**Folding the arts and humanities into STEM develops creative thinkers.** Not all students flourish with a diet of 100% STEM activities, and not all students flourish in 100% arts classes. Where can the arts and sciences coexist to develop creative people for the future workforce? In the music classroom, of course!

Music educators play an integral part in our students' education. **Purposeful teaching that blends music and the arts sets our students up for success**, changing STEM to STEAM. Music performance builds life skills for success: teamwork, attention to detail, drive, and perseverance. We are catalysts for preparing students for whatever career path they pursue. In this New Year, I urge you to **give STEAM a try and utilize it in your music classroom**. It will revolutionize your teaching and set you and your students on a trajectory to be over the moon.

Check out my YouTube video Space Explorers Anthem



Our school, Savannah River Academy, had the once-in-a-lifetime experience of an ARISS radio Downlink with the International Space Station. Students talked with NASA Astronaut Tom Marshburn, as the ISS flew 250 miles above our school, at a rate of 17,500 miles per hour. In addition to singing the song in class, the learning process included a discussion of the effects of long term space flight, and also incorporating colorful NASA illustrations that corresponded with the lyrics.

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