



Discover Your STEM Skills Through Music - Part 3

EDUO 9922 1 Semester Credit/Unit

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Course Syllabus

Discover Your STEM Skills Through Music, Series Overview

Learn to recognize how the power of music relates to skills used in STEM. Music involves reading, analysis, perseverance, problem solving, assessment and refinement. Challenge your critical thinking skills through hands-on activities that involve analyzing and solving missing components. Educate yourself on the Power of Music through “The Music Advantage”. Required book only for the first course in the series: “The Music Advantage” by Dr. Anita Collins. Several courses require signing up for use of the free app, [Online Pianist](#).

Course Overview

Continue to learn the cognitive benefits gained through learning to read and play music. Engage your critical thinking skills through music maps and melodies in the form of code. Make a water xylophone and discover pitch through vibration of sound. Play simple melodies on the water xylophone. Required materials: 8 clear tall glasses, food coloring and color markers.

Course Learning Objectives:

- Understand the cognitive skills learned through reading and playing music.
- Gain an understanding of how to read and create a music map.
- Analyze and identify missing components.
- Engage in playing music using technology.

Course Relation to CCS or other Professional Standards

NATIONAL MUSIC STANDARDS

<https://www.nationalartsstandards.org/>

- Creating - Generate and conceptualize artistic ideas.
- Performing - Select, analyze and interpret artistic work for presentation.
- Responding - Perceive and analyze artistic work.
- Connecting - Synthesize and relate knowledge and personal experiences to make art.

How to Submit Coursework

Each completed assignment in this course is submitted to the instructor for review. Follow directions at the end of each assignment on how to prepare and submit your assignments. Name each file submitted with your last name and assignment number (i.e. BrownAssignment3. Make sure you place your full name, course number and assignment number at the top of each document page. You will receive feedback from your instructor within 5 working days indicating successful completion of the assignment or the need for revision. Assignment grades will be averaged for the final course grade. Unless otherwise indicated, place ALL completed assignment in the LMS Dropboxes.

Assignments. There are 2 course assignments to complete.

Assignment 1 DECODE THE TUNE

Reading, problem solving, spatial analysis and listening skills are required to decode the 6 familiar melodies in Exhibit 1. The short tunes are in the form of a Music Map. Open the Virtual Keyboard; onlinepianist.com or other keyboard to assist with the assignment.

- Observing the upward and downward movement, short and long notation, the skips and stepping motion of the lines. Tap or Clap the code.
- Using the Virtual Keyboard provided in the Resources; click on Letter Names to see the letters on the keys. Play the opening pitch (letter) to give yourself a beginning pitch and hum or whistle the melody with the map.
- Experiment with steps or skips on your virtual keyboard to solve the name of the tune.
- Refer to Exhibit 1 and assign a Music Letter Name to each code mark. Test your Letter Names with the virtual keyboard or other instrument.
 - Fill in the Letter Names and Color the letter names on Exhibit 1 with corresponding color markers. Identify the Answer and Submit to Assignment 1 Dropbox.

Assignment 2 Connecting your skills to Science. The creation of sound involves producing vibration and sound waves. This assignment will involve researching the internet on how to create a xylophone.

- Research Water Xylophones.
- Configure the glasses to represent the 8 notes in a C Scale.
Refer To Exhibit 1, add food coloring to dye the water to the corresponding notes. Test your xylophone with the virtual keyboard playing the Scale C D E F G A B C
- Measure and determine the appropriate levels of water to represent notes in the C scale.
 - Refer to Assignment No. 1. Practice playing all of the songs on the water xylophone. Submit a video or recording of your playing. **Share the video link with the instructor or attach to email. You can place the link on a document to place in Dropbox 2.**
 - Read the article written by the National Association for Music Education on “The Important Benefits of Music in our Schools” or the book by Dr. Anita Collins, “The Music Advantage” listed in the Resources section. Submit a paragraph to Dropbox 2 outlining the cognitive skills used in this assignment.

Course Materials and Resources Section:

National Music Standards <https://www.nationalartsstandards.org/>

Book: “ The Music Advantage - How Music Helps Your Child Develop, Learn and Thrive,” by Dr. Anita Collins; ISBN: 978-0593332122, also available at libraries.

<https://nafme.org/important-benefits-of-music-in-our-schools>

Musicnotes.com

Virtual Keyboard; onlinepianist.com

Course Assessment Rubric:

EXCELLENT Meets or Exceeds Course Objectives: A to A-	ACCEPTABLE Majority of Work Meets Course Objectives; B+ to B-	NOT ACCEPTABLE Needs Considerable Improvement: Resubmit Work Suggested: C or below
All work submitted reflects in-depth understanding of course objectives.	Most work submitted reflects in-depth understanding of course objectives.	Work shows little or no in-depth understanding of course objectives.
Assignment responses show evidence of new knowledge evidenced by thoughtful, detailed and accurate assignment responses.	Most assignment responses show evidence of new knowledge evidenced by thoughtful, detailed and accurate assignment responses.	Responses show little to no evidence of new knowledge as evidenced by lack of thoughtful, detailed and accurate assignment responses.
Work submitted was organized and clearly articulated. The student carefully followed all assignment instructions. The instructor did not have to provide continual assignment clarification or request revisions.	Most work submitted was organized and clearly articulated. The student carefully followed all assignment instructions. The instructor had to provide continual assignment clarification or ask for revisions.	Work submitted was not organized or not clearly articulated. The instructor had to provide constant clarification and ask for continued revisions.
Assignment content and required projects were original.	Assignment content and required projects were original.	Evidence that not all assignment content and required projects were original.
Work is free of spelling and/or grammatical errors.	Work has few spelling and/or grammatical errors.	Work has numerous spelling and/or grammatical errors.