Music Blocks Workshop

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Abstract

This workshop is a hands-on introduction to Music Blocks, a microworld of music designed for teachers and learners to explore the fundamental concepts of music in a visual-coding environment (`http://walterbender.github.io/musicblocks`). Music Blocks is both innovative and beneficial to music education in a number of ways: On the one hand, it is a new method for understanding the fundamental concepts of music; on the other, it is a tool for learning coding and logic skills. It integrates both music and STEM fundamentals in a fun, scalable, and authentic way.

Keywords: music, programming, reflection, Logo

Introduction

Music Blocks (See Figure 1) provides a collection of technological tools specific to a microworld of music, starting with pitch and rhythmic note values, but also providing affordances for repetition, transposition, etc. Music Blocks is more than an interface to a synthesizer and more than a transcription/engraving tool—it is a scalable and modular collection of essential building blocks, which are at the crux of all powerful ideas in music.

Figure 1: The Music Blocks programming environment running in a Web browser

The workshop will be organized around the concept of a "power piece". A power piece is a melody or a song that is taught because it is powerful and becomes more powerful as it is

taught. A power piece is authentic, archetypal, and timeless, yet historically relevant, integrative, and infinitely malleable. *Twinkle-Twinkle Little Star*, a popular English lullaby sung to the tune of the French melody *Ah! vous dirai-je, maman,* published in 1761, is a classic power song. Mozart recast it as a highly embellished theme in his set of *Twelve Variations*. Since its inclusion as a Suzuki-method staple, it has become even more widely known and transformed, further expanding its potency. Its simple and elegant design allows for embellishment, refinement, and pedagogical repurposing (e.g., to teach new rhythms, as a vehicle for learning harmony, etc.). In this case, we will work with a power piece that would be familiar to children in Thailand.

The *power piece* approach differs from just learning more repertoire. Musical pieces are chosen, studied, and manipulated as a means to deepen one's understanding of musical concepts. For example, studying even the first section of the jazz standard *Autumn Leaves* (originally *Les feuilles mortes,* published in 1945 by Joseph Kosma), in all twelve keys in various ways (melody, harmony, guiding tone lines, with improvisation) would deepen a learner's understanding of the archetypal and important minor cadence in jazz.

Music Blocks brings the building blocks of music to the fore. It starts with music's most fundamental parameters: pitch and rhythmic note values. Combining the two parameters creates a note with a definite pitch and duration. Ordering notes in a sequence creates melody, and stacking different notes of the same rhythmic note value at the same point in time creates harmony. Once a melody has been created, "chunks" can be created and combined to create higher-level musical forms. Building in complexity, Music Blocks software provides blocks to manipulate pitch and rhythmic note values through repetition, transposition, note value augmentation and diminution—just to name a few. These tools, because of their inherently fundamental nature, become a powerful metaphor when scripting power pieces.

When exploring a power piece with Music Blocks, a learner might engage in a type of problem solving that is not very different from what a student of music theory might do to analyze a piece of music. Music Blocks places all of the analytic tools in the foreground and makes them easily accessible with minimal music-specific jargon.

Who should come to this workshop?

Children (ages 8+), educators, makers, musicians

Number of participants

15

AV needs

LCD projector, Internet, speakers
Participants should bring a laptop with either Chrome, Firefox, or Safari installed.

Recommendation for participants

Spending some time exploring Music Blocks (and Turtle Blocks) beforehand would be useful, but not required.

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http://walterbender.github.io/musicblocks
https://github.com/walterbender/musicblocks/blob/master/guide/README.md
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Detailed agenda

Introduction to the Music Blocks Microworld (15 minutes)
Guided exploration of Music Blocks (30 minutes)
Power piece exercise (30 minutes)
Presentations and discussion (15 minutes)