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Student1(7)

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Writing music is like writing programming. Classically speaking, there are principles guiding the creation of a piece of music, just as there are principles guiding the creation of a program. For example, the program shell can be likened to a musical score, both having various structural elements to which one must adhere. There is also a musical "language" of quarter notes, treble clefs, time signatures, and rests that can easily be compared to the "language" of programming.

Our project will focus on blending the art of programming with the art of creating music. Children will be able to link meaningful musical symbols to multisensory outputs already utilized in [PicoBlocks?](#) In essence, children will use quarter notes, tones, octaves, chords, time signatures, lights, and motors to create their own musical/multisensory composition. Our thought is that children who have not, in the past, been able to write a piece of music or hear a piece of music (children with hearing impairments, for example) would be able to enjoy a musical experience in an entirely new way using colored lights and vibrations. We will combine Logo programming with a musical lesson by creating a musical template containing items such as quarters notes which students will be able to expand upon and create musical compositions. Musical concepts such as themes, choruses, codas, etc. can all be explored programmatically through various kinds of looping.

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Sample tool that supports creative design and/or creative collaboration

MIT Media Lab **Toy Symphony** Project - Tod Machover (Composer and Inventor, Project Director)

Toy Symphony is an exciting new music-making project for kids. Using newly designed Music Toys, you can learn to perform and compose music easily and have a lot of fun, too! There are three Music Toys used for Toy Symphony, and all are enhanced with technology so that you can learn not only about the different aspects of music (melody, harmony, and rhythm) but also how to write music and perform on a musical instrument in an easy, fun way. Toy Symphony is a project that will travel to different cities, involving local children and professional musicians in a week-long workshop that ends in a concert performance. At the final concert, children will play alongside professional musicians on stage, performing music that has been written by children and professional composers.

[HyperScore](#), one of these three music toys, caught my attention in particular due to the nature of my group's final project for this class. **HyperScore** serves as the main composition tool of the Toy Symphony project, designed to introduce children to musical composition and creativity through freehand drawing on a musical sketchpad / timeline. The child creates music compositions through these freehand drawings and then combines/selects color-coded musical materials (sounds like chords, melodic motives, timbres) which are annotated along the spine of the narrative line. Then the resulting composition can be played and shared. Parts of and completed works can be exchanged in a version of the program available online. There is also a [HyperScore](#) showcase that features scores created by children and performed by orchestras.

I was particularly interested in looking at the design of this tool, its support of user as the designer, and the caliber for potential collaboration (playing alongside professional Grammy Award-winning violinist Joshua Bell) available with this project. I like the fact that this tool affords a high level of control and interaction in a short amount of time, makes music creation results fun and easy, tangible and real, and potentially meaningful and inspiring to the musician-to-be in all of us. For anyone traumatized by childhood music teachers who scolded you and made you feel inadequate, this environment takes the fear out of learning to read music and/or hitting the right notes. Instead it focuses on the raw fun of simply making music through an approachable format. I hope that Prof. Resnick has more info / background info on this project to share with us.

[Hei-Jung: Neat! I found a music composition tool as well, but this is much more open-ended and I love that there is a way for the created scores to be acknowledged by others. By the way, Todd Machover also composes music. I think he used synthesized music(not sure if I'm right here...) for one of his opera compositions. The world premiere for one of the operas he composed was in Boston, I went to see it, and I'm not sure if I liked it, but I thought it was very interesting.]