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Letter to the Teacher

Dear Prospective User of the Midi-Music-Math-Science Curriculum,

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*Years old, this **CONCEPT**-based curriculum is nevertheless still NEW. It is designed to inspire the creative Teacher to think and design their own methods of reaching their students.*

*Should you decide that you would like to make use of the curriculum and/or any of the ideas suggested within, an all-inclusive, one-time fee of **\$150** is required.*

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Thank you and I hope you will enjoy the mindstorm ahead.

MUSIC: A WAY OF KNOWING

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INTRODUCTION: A Return To The Origin

“Suspension of Disbelief” is that device in literature or drama that allows us to continue a belief in something that quite simply **“is not”**.

When we watch **STAR WARS**, we accept it as “real” or “possible” because certain laws of credibility are established, laws which consistently adhered to, suspend our belief in the story. If a parameter of the laws created for that fictitious world is violated, we no longer accept the story. This happens in the sciences frequently. New revelations constantly cause us to reevaluate accepted theories of the past, dismissing old stories or explanations with new, sometimes quite adventurous ones.

In mathematics, we create worlds where certain laws will **ALWAYS** work. This allows us to talk logically and consistently about **THINGS WHICH DO NOT EXIST**. Theorems of geometry let us play logic-games about shapes which only exist in our imaginations. Once we have proven the credibility of these mathematical processes, we can then apply them as plausible “stories” or explanations for how certain things in nature behave. Kepler, inspired by a dream of his distant colleague, Pythagoras, used geometry to explain the orbit of the planets, and saw this simple, perfect mathematical relationship in all things, from Music to planetary motion.

In both instances, the real subject of study is the **SELF**, the **IMAGINATION**, and the search for meaning with regards to how **SELF** and universe blend. Indeed, our very presence, is intimately joined with a universe, observable, because we are there to observe it!

With the mathematical language of **MUSIC**, a world or self-sustaining micro-universe is created which embodies rules and formulas. We adhere to the rules and create or experiment with juxtapositions of frequencies, timbres, intensity levels, and the binary interplay of sound and silence. The **“RIGHT”** combination of events, as in the search for a consistent equation to explain a theorized phenomena, yields meaning. **BETWEEN** these sounds (*when ART, or careful intellectual reasoning has been achieved*), spaces are created which invite the imagination to enter.

This “space” is **NO** different than **HILBERT SPACE**... or as it is referred to in Art, **NEGATIVE SPACE**. It is a place beyond the 4 dimensions, beyond the quarks, beyond quantum leaps. It is a place of the imagination. Physics like the other subjects, seeks the same fleeting mysteries of knowledge and meaning... only in another language... another *“way of knowing”*.

In **THE NEW YORK TIMES**, 1 June 1987, an article addresses **M.I.T.’s “LOOK BEYOND ENGINEERING”**, the goal being to **“bridge the gap”** between humanities and engineering. On a superficial level, this kind of well-rounded approach is supposed to bring about a richer student. In reality, there is **NO** bridge between **MUSIC, MATHEMATICS, PHYSICS**, and the quest for knowledge. The methods may vary, and the short range investigations may be worlds apart, but these things are united by what they ultimately seek... the relentless reaching of the mind, and the understanding of who and why we are. That, in my opinion, is the very **REASON** for education.

***NOTE: Education derives from the word “EXTRACTION”
Instruction derives from “TO INTRUDE”, “TO PILE UPON”***

***In this course we must do our best to be educators, not
instructors.***

When students are allowed to experiment in the world of the infinite, they become richer, complete, and in so many ways, self-discovered. Man is an *animale symbolique* and until such time as we can **TRULY** be pure thought, we will always bring to our domain **WAYS OF KNOWING**. Music is **ONE** of the **WAYS** in which we seek fulfillment and answers to our humanity.

These ideas are not new.

***There is geometry in the humming of the strings. There is Music
in the spacing of the spheres.
PYTHAGORAS, 5th century BC***

It was Aristoxenos of Tarentum, a great 4th century BC Music theorist, who in his attempt to “fit” semitones into a proportionate scale, discovered a “calculus by logarithms” (*how some synthesizers create sounds today*) that established Music as a major Greek science alongside arithmetic, geometry and astronomy. These four, constituted the quadrivium of higher classical learning until the end of medieval times.

Perhaps, this course, is simply that... a return to this original unified approach in reaching outward and inward for understanding.

***The souls of men rejoice in those very proportions that God
employed, wherever they find them, whether by pure reflection,
or by the intervention of the senses in matters subject to the
senses, or by innate instinct.***

Johann Kepler @1619

In this course, the **composer-scientist-mathematician**, will take the student on a journey through concepts, thinking, and reasoning. With contemporary pop-Music as the starting point, the student will become exposed to current scientific and mathematical thought.

BUT..... HOW WILL THESE DISCIPLINES INTERFACE?