

Unit 1: Getting Started

Mission 5: Micro Musician



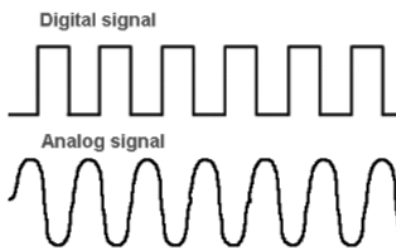
Intro and Discussion Points:

Computers and music go great together! This project brings together coding, electronics, and music. The CodeX has a built-in speaker, and there are lots of built-in tunes to play, so this is a short and sweet project to begin expanding students' view of the possible ways they can use coding.

You might ask students: "Where is the speaker on the CodeX?" Cool sounds can be made just by sending electrical pulses (binary 1's and 0's) to the speaker under software control. Code *really* rocks!



Type of Input Device	Examples	Type of Data Read
Analog Sensor	Flex sensor, Pressure sensor, Photocell	Range of values, e.g. <ul style="list-style-type: none">• 0-255• 0-1023
Digital Sensor	Push Button	<ul style="list-style-type: none">• 0 or 1• On or Off• True or False• High or Low



CodeX Lesson Plans

UNIT 1 : Getting Started

MISSION 5: Micro Musician

DAYS: 1

UNIT GOALS: Students will learn the basics of Python.

ADDITIONAL MATERIALS:

- batteries

VOCABULARY:

- Mechanical waves
- Amplifier
- mp3

FOCUS CSTA STANDARDS: 1B-CS-01, 1B-CS-02, 1B-CS-03, 2-AP-16, 1B-IC-18

LEARNING TARGETS:

- I can make the CodeX play music through the speaker or headphones
- I can add comments to my code to make it readable by all

SUCCESS CRITERIA:

- Play some of the CodeX's built-in songs
- Add comments to the code

KEY CONCEPTS:

- You can "import" new code modules that have fantastic capabilities (like music) with python's `import` statement.
- Batteries can make your CodeX portable.

DISCUSS REAL WORLD APPLICATIONS:

Computer controlled music sequences are very common. You can probably think of many more instances where computer-controlled tones are used for entertainment, alarms and alert messages, etc.

- Musical gift cards
- Ringtones
- Drum Machines
- Keyboard Synthesizers

ASSESSMENT STRATEGIES:

Remix suggestions (set aside 0.5-1 period to complete):

- Try different songs from the CodeX's repertoire
- Add "winning" and "losing" songs to the prior mission's remix game
- **2.16 Unplugged** - students should demonstrate that they can load a program on the CodeX and run it off batteries.

TEACHER NOTES:

Always refer to [Appendix A](#): if you get stuck. It has the "Answer Keys" for you.

In order to add your own sounds, go to [FiriaLabs Docs](#). Click on "Working with Files" on the left side and it will walk you through adding music files to your CodeX.