Unit 1: Getting Started

Mission 1: Welcome & Mission 2 Introducing CodeX

Intro and Discussion Points:

These first missions are all about getting to know the **Codespace** user interface and the **CodeX** hardware. Before you finish, you'll plug the hardware in and write some code to make it do something!

Remind students to be careful when plugging the USB-C cable into the CodeX, they should focus on pushing it and pulling it straight and not rocking it back and forth! With a "bare circuit board" like the CodeX, students should have clean hands before handling, as food particles and liquids can cause the circuits to malfunction. Static electricity can also damage the CodeX, so you'll need to show students a way to "ground" themselves prior to handling it. An example reliable grounding point is a light-switch screw or metal wall plate.

In this early stage, the most important guidance is to **carefully read** the instructions. The answer to most problems is right there on the screen!

Preparation and Materials:

Each student will need a computer running the Chrome web browser. Make sure the computers can successfully login to **https://make.firialabs.com/**

For younger classes (5th grade and below) we recommend waiting to hand out the CodeX until they are first shown on the screen in Codespace. The on-screen instructions will inform students about proper care and handling of the CodeX. Each student will need a CodeX and a USB-C cable to complete this first project.

CodeX Lesson Plans

UNIT 1 : Getting Started	**MISSION 1:** Welcome & MISSION 2: Introducing CodeX	**# DAYS:** 1
UNIT GOALS: Students will learn the basics of Python.	**DAILY MATERIALS:** ● Google Chrome ● CodeX (1 per student) ● USB-C cable (1 per student)	**VOCABULARY:** ● CodeX ● USB-C cable ● program

CSTA FOCUS STANDARDS: 1B-CS-01, 1B-CS-02, 1B-CS-03, IB-IC-18

LEARNING TARGETS:

- I can safely connect and disconnect the CodeX to my computer.
- I can create a new file and name it according to its purpose.
- I can write code using conventions of capitalization and punctuation specific to Python.

SUCCESS CRITERIA:

- ❏ Identify major parts of the Codespace interface: Mission Bar, Objective Panel, text editor, CodeTrek, Toolbox, and Lesson Navigation Controls
- ❏ Successfully connect and disconnect the CodeX using the USB-C cable.
- ❏ Identify major parts of the CodeX: USB connector, LCD Grid
- ❏ Write a program, load it to the CodeX, and run it.

KEY CONCEPTS:

- Follow instructions in the **Objective panel** carefully.
- The **text editor** is where you type in the code!
- Your code is saved to the file **name** you create.
- Look for “tool icons” to collect coding-tools in your **Toolbox.**
- The **CodeX** is a powerful general-purpose computing device you can use to build an infinite number of cool projects.

DISCUSS REAL WORLD APPLICATIONS:

Make sure each student takes the time to personally inspect their CodeX. Discuss the fact that all the electronic devices they use have similar circuit boards inside. The tools and techniques they’re learning apply to all the electronic devices they use every day! Challenge students to name a few devices they use every day that might contain computer chips or “microcontrollers” such as the one on the CodeX. How many of the following do they think of? There are so many more!

- Microwave oven
- Cell phone
- Automobile
- Watch or fitness tracker
- Video game controller
- Refrigerator
- Home thermostat
- Coffee maker
- Bread machine
- Alarm system
- Fuel pumps
- Automatic garage doors
- Electronic locks

Challenge students to describe how our lives are impacted by the above technology, and to compare how related tasks were done before computer technology was invented.

ASSESSMENT STRATEGIES:

1.4 Checkpoint - could use as an exit slip
1.11 Checkpoint - Students show their modified code on their CodeX.

TEACHER NOTES:

Always refer to **Answer Keys by Mission** if you get stuck. All coding solutions are available, in alphabetical order.