Lesson Plan Outline

1. Introduction
   1. Teacher introduction
   2. Explanation of what this app is
   3. So what is coding? What is programming? (start of new images)
      1. “Well think of a computer as an individual who can speak different languages. Coding is basically writing in a computer’s language. Just like I’m talking you in English, you could communicate with a computer in Java, Python and so many more. And it’s not just a computer that you could speak to. Smartphones, tablets, gaming consoles, and even some watches can understand these types of languages. And they’re willing to listen to you and do as you ask, that is if you can ask them correctly.”
      2. Just like human language, most computer languages have similar characteristics. Those similarities are what we are going to focus on in this module.
2. Variables
   1. “What’s a computer’s favorite subject? Math! Computers love math so much, that numbers and symbols often used in your various math classes are in many of their languages!”
   2. Explain what a variable is
      1. “That’s where variables come in. A variable in its simplest form in an item you give a value. Think of money. An apple at a store could be worth a 1 dollar. To tell the computer this you would write some like this on the board: [displays price apple = 1;] The apple is a variable, while the 1 is its value.”
   3. What do the = and the ; mean?
   4. Why is price in front? (explain a data type)
   5. Provide a few more examples
3. If & Else Statements
   1. “Many computer languages love to use various English words. Some of the are: return, string, main, and root. Today we go over the following: True and False, IF and Else.”
   2. Present words by using word problems
      1. “For example let’s say you told somebody ‘its raining outside’. If it is raining outside then what you said is true. However if it’s not raining, you statement is false. How could we write this in a computer’s language?”
   3. Connect variables to these statements
   4. Go over a few symbols
   5. More examples with these symbols and variables
4. Loops!
   1. “Time for some geometry! Try and draw a circle. If your like most people you probably started your circle where it ended, making a loop. Computers like loops too, or rather statements that repeat themselves.
   2. How should we explain loop (with while, to/from, repeat for)?
   3. “Computers have a good memory and count or keep track of changing values of variables for each loop.”
   4. Go through a simple loop step by step with animations
5. Methods
   1. “So you’ve learned a couple of ways computers communicate, but you’ve only been talking in fragments. Let see if you can have a whole conversation!”
   2. Explain methods
      1. “Think of methods like a paragraph. Variables are words while loops and statements are sentences.
      2. How to recognize a method
   3. Provide examples
6. All Together! (Very animation heavy)
   1. Build a small file with 2 methods and go through what each thing is and how a computer would react to it.