Learning Objectives:

- Students will learn how to re-assign variables in Python.
- Students will learn how to store and use input from a user.

Standards:

9-12.CT.5 Modify a function or procedure in a program to perform its computation in a different way over the same inputs, while preserving the result of the overall program.

9-12.CT.9 Systematically test and refine programs using a range of test cases, based on anticipating common errors and user behavior

Resources: Slides, Replit

Assessment: Student Discussions, Student Code, HW Quiz

Aim: How do we manipulate variables and data in Python?

Do Now: With a partner, consider the following question:

- ***What does the word "manipulate" mean, in terms of data?***
    - This question gives students a bit of context around today's lesson

Mini-lesson: Variable Updating

- Students will be introduced to variable reassignment in Python.
    - CTQ: Carl overrides Kevin. WHY?
    - CTQ: What data type is the score?
    - CTQ: What is the difference between these score programs?
- Students will take notes on variable updating. They will also be testing bits of code as they take notes.
    - As another access point, students will be shown the blocks in Scratch that relate to the same process.

Task 1: Variable Program

- Students will create a program to practice updating variables.
- They will continue to add to this program as we go through the rest of the lesson.
- Teacher should circulate during this time!

Mini-lesson 2: How can we collect input from the user?

- **<u>Turn-and-talk (OUT LOUD):</u>**
    - Explain the following code from Scratch
    - Explain this code from Javascript:
        - **var name = prompt("What is your name?");**
        - **println("Hello " + name + "!");**
- Students will look at how user input is taken in Python.

Task 2: User Input and Variables

- Students will write a program that creates variables, stores user input and uses the input to respond.
    - Using your variables program from earlier in the period, **write a program that:**
        - Collects information about the user to be stored in variables:
            - Name
            - Age
            - choose your own!
        - Responds back to the user's input & collects a different input.

Summary: Students will be asked to reflect on today's activities with the following question:

1)
```
luke_color = "green"
jenna_color = "blue"
luke_color = jenna_color
    #what are the values of each variable?
jenna_color = "red"
    # what are the values of each variable?
```

2) In what way(s) did you feel successful? What was challenging about the tasks today?

HW Quiz: Being that this is day 5 of the unit, students will complete a HW challenge incorporating lessons 1-5.