**Instructional Day**: 14

**Topic Description**: This lesson provides an introduction to the concept of variables.

**Objectives:**

The students will be able to:

* Explain the concept of variables
* Create examples of variables.
* Explain the concept of iteration.
* Create examples of iteration.

**Outline of the Lesson:**

* Finish Presentations (25 minutes)
* Journal Entry (5 minutes)
* Make Variable Example (15 minutes)
* Enhance Variable Example (10 minutes)

**Student Activities:**

* Finish Presentations.
* Complete journal entry.
* Participate in a discussion of the Make Variable example
* Enhance the variable example.

**Teaching/Learning Strategies:**

* Finish Presentations
  + Have students fill out Peer Grading sheet.
  + To help students vote on the best, you may need to do a quick recap of the stories. You may also want to quickly replay some of the better ones.
  + Another option is to have students pick the best of each day and do a run off just replaying the top 3 from each day.
* Journal Entry: What does the word variable mean in both mathematical and English terms?
  + Time the students so they work 3 minutes individually and 2 minutes sharing with their elbow partners.
* Make Variable Example
  + Give two math examples. x+3=5,2x=12
    - Ask: What is the name of the variable here? (Answer: x)
    - Although you have x in both equations, its value varies: it is 2 in one equation and 6 in another.
    - The notion is the same in a program—a variable is a name that represents a value that can be changed. In the math example, the name was x.
  + Make the variable example with the students (variable example.sb) having the students help you and build their own at the same time. A possible sequence might be
    - Start by explaining that you want to make a game where you earn points for picking healthy foods and lose points for picking unhealthy ones.
      * What do you think the variable will be? If no answer, ask what name will represent a number that will change? (Answer: Points (or Good Nutrition Points in the example))
    - Add the sprites for the banana, cheesie poofs and text that says “Click on food to eat it”.
    - Ask: What tab do you think you should click on to make a variable? (Answer: Variables.)
    - Click “make a variable” calling it Good Nutrition Points.
      * Clicking the checkbox next to the variable will show or hide it.
    - Ask: If I want to make my points increase by 1 every time I choose the banana, how would I write that script? (See example.)
      * Explain that this is an example of iteration.
    - Ask: How about making the points decrease by one when I click on the cheesie poofs? (See example.)
    - Ask: What do you think should happen when the green flag is clicked? (Answer: reset the points to 0.)
      * Ask: How do you think we should do that? (In example the script for this is under Sprite4)
        + Ask: Does it matter which script the “when green flag clicked” is under? (Answer: No.)
      * Explain that this is an example of initialization.
* Enhance Variable Example
  + Have Students enhance the variable example by
    - Adding a food that is worth 2 points when clicked on.
    - Adding a food that is –3 points when clicked on.

**Resources:**

* Peer Grading