

## Session 4

### Coding Concept: Variables

#### Objectives:

Students will be able to explain to a partner what variables are in relation to coding.

SWBAT explain variables in terms of “Mad Libs.”

SWBAT use variables to complete lessons in Code.org.

SWBAT use variables to create a game with a score in Play Lab.

#### Supplies

- Whiteboard and Markers
- Pencils
- MadLibs worksheets
- Snacks

#### Icebreaker/Introductions

Introduce self, the program, the research aspect, hand out forms to sign.

- *“App Authors is a program that provides technology, tools, and skills so that young people can learn to code apps that represent yourselves... Because the world needs more diverse coders, starting with younger people like you guys!”*

Game Time:

- Tell us your name and your favorite thing to do in the summer

#### Definition: Variable

- Start with a quick refresher of functions from last week. Remind students that when using Play Lab, the functions used parameters like “height” and “actor.”
- *Variable: A placeholder for a piece of information that can change.*

#### 40 mins: Unplugged

- Variables
  - Poem: *“I’m going to write a poem about someone.”*
    - Choose a student. Write on the whiteboard: Roses are red, Violets are blue, Coding is cool, and \_\_\_\_ is too!
    - Erase and rewrite the whole poem for the next student. Repeat once more, then say *“now if everyone wanted a poem written about themselves, this could take a while!”*
    - They will notice that only one word is changing, explain that we can call that a variable and use a “placeholder” so we don’t have to rewrite the whole poem every time. But we have to call it something descriptive so we know what that variable stands for.
      - Write out the poem again, this time leave a blank for [name]

- Write “set [name] to (next student’s name)” and read the poem out again. So much easier!
- **Mad Libs as Variables**
  - Give kids time to come up with their own values for variables [animal], [food], [drink], [adjective], [verb], and [number].
  - Have everyone fill out their worksheets (fill-in-the-blank worksheets for each student), then read them aloud, one at a time
    - Have the story on a slide (use a different color for each variable, make sure they notice that each [animal] variable is the same)
    - Write the values on the whiteboard and explain “everywhere we see the variable “animal,” we replace it with the value that we’ve set for it
      - “Set “animal” to \_\_\_\_”

**How to take care of your pet [animal], by [name]:**

**Make sure that your pet [animal] has plenty of [food] and [drink]**

**[animal]s live in [adjective] environments, so make sure that your house is [adjective] and welcoming.**

**[animal]s need to [verb] every day, so be sure to [verb] with them.**

**[animal]s do not like to be alone, so if you want to have one as a pet, you must adopt [number]**

**1 hr 15 mins: Practice on code.org**

- Course 4
  - Lessons 6&7

**1 hr: Lab**

Play Lab

- Use variables to create a game with a score
- Talk about how setting your actors and background uses variables - “Actor 1” is always the same value