AP Computer Science Principles
Introduction to Python
Lesson Plan: Week 3 Day 2-3

Week 3 Day 2 - 3

IOSWBAT: Create a program in Python using a list to simulate a Magic 8 Ball (i.e. fortune teller).

Standards:

9-12.CT.7	Design or remix a program that utilizes a data structure to maintain changes to related pieces of data.
9-12.DL.2	Communicate and work collaboratively with others using digital tools to support individual learning and contribute to the learning of others.

Aim: How can we create a program in Python using a list to simulate a Magic 8 Ball?

Do Now: Turn and Talk: What do you think the following program will output?

```
1  presidents = ["George Washington", "John Adams", "Thomas Jefferson", "James Madison"]
2  presidents[1] = “Barack Obama”
3  print( presidents )
```

<answer = ["George Washington", "Barack Obama", "Thomas Jefferson", "James Madison"]>

Vocabulary (review):

- **List:** A list is a data structure that stores a collection of values. *Syntax*: The elements of a list are enclosed in square brackets and separated by commas.
- **Element:** A value that is stored in a list.
- **Index:** The location (“address”) of an element in a list. ***In Python, the index of the first item of a list is 0 (NOT 1).

Introduce the Magic 8 Ball project:

1. Discussion: ask students if they have ever heard of, seen, or used a Magic 8 Ball.
2. Investigate: have students spend a couple of minutes working in pairs using an online Magic 8 Ball simulator https://www.indra.com/8ball/front.html
3. Define the problem: introduce the assignment document (Assignment Doc – Magic 8 Ball.pdf)
4. Have students read the Assignment Doc and answer any questions
5. Inform students that the project is due at the end of the next class
6. The remainder of this class and all of next class will be spent working on the project