**Name:** Stephannia Kabanakis

**Course: AP CSP**

**Topic:** AP CSP Short Response

**Date:**

**Essential/Key Question:**

How can list manage complexity?

**Performance Objective or Goals:**

* 9-12.CT.1 Create a simple digital model that makes predictions of outcomes.
* 9-12.CT.7 Design or remix a program that utilizes a data structure to maintain changes to related pieces of data.

**Students will be able to:**

* Create a list in python
* Insert, replace, or delete a value within the list
* Explain how a list can manage complexity within a program
* Sort a list in values\*\* extra if we have time in class

**Academic Vocabulary or Language:**

**list -** an ordered sequence of elements (or items)

**element**- an individual value in a list that is assigned a unique *index*

**index**- the number used to access a specific element in a list. Also called **item number** in Hatch.

**length of a list**- the number of items in a list

**Instructional Materials:**

* PowerPoint
* Kid Oyo (coding platform)
* Note packet
* Dice

**Anticipatory set/ Do Now (Motivation):**

Dice rolls- give each pair of partners a pair of dice. Have them roll the dice 10 times and record what they got for each roll.

Then have them create a pseudo code of how they would keep the record within a program.

Then have each pair share their pseudo code with another group and comment on their similarities and differences

**Instructional Procedures- Process to acquire new information- learning sequence:**

* I would have each group share out their pseudo code.
* At this point students know how variables can hold values
* This is the bridge to come over into lists.
* I would go over the components of a list
* Compare how list are like variables except they can hold multiple values
* How the index works,
  + In python starts at 0
  + Hatch starts at 1
* How to add value into the list
* How to delete items in a list
* How to call items
  + Print in python
  + Show in hatch
* After we go through a live coding example of how to use list, Students will create a list using a dice stimulus.
  + This would require students to use random generator
  + Store the numbers into the list

**Support and Scaffolding:**

* Graphic organizer
* Note packet
* Code template
* Pseudo code

**Assessment-closure-evidence of learning:**

* + Exit ticket:
    - Have students compare their pseudo code from the warm up to how they used the list, How does the list help simplify the program?