

**AP CSP Python with Robots
Lists #1 Activity Guide**

Name:

Warm Up : Answer the questions, either individually or in a group.

Pre-work:

What are some lists you use in your daily life?

Answers will vary, but can include:
Song playlists; phone contacts; grocery list; homework assignments; class schedule, etc.

What is a variable?

Answers will vary;
A variable is like a box with a label for storing data; a named memory location; etc.

What is a limitation of a variable?

It can only store one value at a time.

Warm-up:

Pick any topic that interests you, or use your daily activities. Write a to-do list: (add bullets as needed)

Answers will vary. An example of daily activities:

- Brush teeth
- Eat breakfast
- Take a shower
- Walk to school

Code Tracing Activities : Write the result of each code tracing activity.

Code Tracing A

`alist = [20, 5, 6, 1, 7]`

Code Tracing B

`blist = [4, 10, 5, 11, 9, 1]`

Wrap Up : Write the definitions in your own words. Then complete the code tracing activities.

Students should use their own words for the definitions. The solutions below are from the presentation, so student answers should be different.

What is a list?

- A list is an ordered collection of elements (items).
- A list is like a variable that can hold one or more values.

What is an index?

The number used to reference an item in a list (the position in the list)

What are elements?

Individual values in a list; each referenced with an index

What is the list length?

How many elements the list contains

What are some list methods?

Append, insert, pop

What is the first index of any list?

0

What is the last index of any list?

`len(list) - 1`

Given the list, indicate the value of each element.
`myNumbers = [32, 64, 33, 0, 15, 26, 31]`

`myNumber[0]`

32

`myNumber[1]`

64

	<table border="1"><tbody><tr><td>myNumber[3]</td><td>0</td></tr><tr><td>myNumber[6]</td><td>31</td></tr><tr><td>myNumber[7]</td><td>Index out of range error</td></tr></tbody></table>	myNumber[3]	0	myNumber[6]	31	myNumber[7]	Index out of range error
myNumber[3]	0						
myNumber[6]	31						
myNumber[7]	Index out of range error						
What will be displayed after the code segment is run?	<pre>myList = [15, 33, 25] myList.append(13) myList.append(myList[0] + myList[3])</pre> <p>What are the final elements of myList? [15, 33, 25, 13, 28]</p>						