

STRANDS AND STANDARDS

PYTHON 2, INTRODUCTION



Course Description

Python is a language with a simple syntax, and a powerful set of libraries. It is an interpreted language, with a rich programming environment, including a robust debugger and profiler. While it is easy for beginners to learn, it is widely used in many scientific areas for data exploration.

Intended Grade Level	7-8
Units of Credit	0.5
Core Code	35.02.00.00.006
Concurrent Enrollment Core Code	N/A
Prerequisite	Introduction to Python 1
Skill Certification Test Number	N/A
Test Weight	N/A
License Area of Concentration	CTE and/or Secondary Education 6-12
Required Endorsement(s)	
Endorsement 1	Introduction to Computer Science
Endorsement 2	Programming & Software Development
Endorsement 3	Web Development
Endorsement 4	Information Technology Systems
Endorsement 5	BAM - CTE/General or Basic or Lvl 2

STRAND 1

Lists (Arrays)

Standard 1

Students will identify when to use a list

Student will create a list with strings and numeric values

Access a particular element in a list by using an index

Standard 2

Students will use the list methods to manipulate their lists

- `.append()`, `.pop()`, and `.insert()`
- `.extend()`, `+`, `.reverse()`, and `.sort()`
- `.join()`, `split()`

Standard 3

Students will use a for loop with “in”

- For example:
 - `fruits = ["apple", "banana", "cherry"]`
 - `for x in fruits: print (x)`

Students will use a for loop with `range()`

- For example:
 - `for x in range (4) print (x)`

Performance Skills

- use a variety of list methods
- use a for loop with “in”
- use a for loop with `range()`

STRAND 2

Indexes

Standard 1

Students will understand an index

- The first index location is zero

Standard 2

Understand how a string is indexed

Work with string characters by index

Standard 3

Students will slice a string into substrings

Students will slice a list into sub lists

Performance Skills

- Find the location of an element in a list
- Slice a string into substrings
- Slice a list in to sub lists

STRAND 3

Working with Files

Standard 1

Students will be able to:

- Import files into Jupyter notebooks by using the curl command.
- Read a local file in memory.
- Use `.read()` to read a specific number of characters.

Standard 2

Students will be able to:

- Use `.readlines()` to read text from files as a list of lines.
- Use `.close()` to free system resources.

Standard 3

Students will be able to:

- Use `.readline()` to read data from a file one line at a time.
- Use `.strip()` to remove newline characters and other whitespaces.

Standard 4

Students will be able to:

- Use `.seek()` to set file read and write locations.
- Use file append mode.

Standard 5

Students will be able to:

- Use `.write()` to write to a file
- Use file append mode to append to a file

Performance Skills

- Use `.read()` to read a specific number of characters.
- Use `.readlines()` to read data from file as a list of lines.
- Use `.readline()` to read data from file a line at a time.
- Use `.strip()` to remove newline characters.
- Use `.write()` to write data to a new local file.
- Use `.seek()` to set file read or write location.
- Use file append mode.

Skill Certification Test Points by Strand

Test Name	Test #	Number of Test Points by Strand										Total Points	Total Questions	
		1	2	3	4	5	6	7	8	9	10			