Computing Year 9 Unit:

Python programming with sequences of data Part 2

Threshold concept—

- Can understand the fundamental principles of computer science, including abstraction, logic, algorithms, and data representation
- Can analyse problems in computational terms

Keyword	Definition
Sequence	One of the three basic programming constructs. Instructions that are carried one after the other in order.
Variable	A storage location with a name. The data in a variable can be changed after being initially set
Selection	One of the three basic programming constructs. Instructions that can evaluate a Boolean expression and branch off to one or more alterna-
Operators	Used to compare two expressions
Iteration	One of the three basic programming constructs. A selection of code that can be repeated either a set number of times (count-controlled) or a variable number of times based on the evaluation of a Boolean expression
Syntax error	An error that has occurred because the programmer has not followed the rules of the programming language

Lists

A list is a data structure that, in Python, can be used to store multiple pieces of data of the same or different types.

Key points about lists:

The **append** list method can be used to add some data to the end of a list.

The **remove** list method can be used to take some data out of a list.

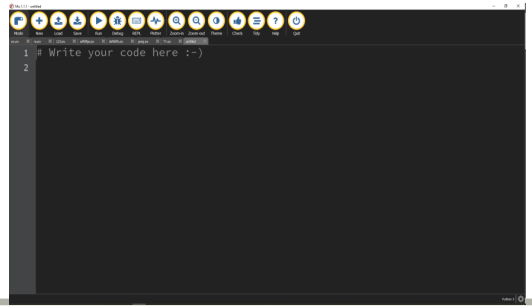
List indexing starts from 0 so when you want to access the first item in a list you need to use 0 as the index value (see Example 4 below).

The **pop** method removes the last item from the list.

The **insert** method can be used to add an item at a certain position in the list.

The **sort** method can be used to get the list items in order.

The **len** function can be used to find out how many items are in a list.



List examples

```
# Example 1 - Creating a new list
myShoppingList = ["Bread", "Apples", "Milk", "Cheese"]
# Example 2 - Adding to a list
myShoppingList.append("Chocolate")
# Example 3 - Removing from a list
myShoppingList.remove("Apples")
# Example 4 - Accessing a list item
print(myShoppingList[0])
# Example 5 - Removing the last item from a list
myShoppingList.pop()
# Example 6 - Adding an item at position 1
myShoppingList.insert(1, "Cake")
# Example 7 - Sorting a list
myShoppingList.sort()
# Example 8 - Checking the number of items in a list
numberOfItems = len(myShoppingList)
# Example 9 - Checking list membership
if "Chocolate" in myShoppingList:
        print("Yum!")
# Example 10 - Changing a list item
myShoppingList[0] = "Banana Bread"
```