Small Basic - Arrays

An array is a variable that can hold more than one piece of data. The data is accessed with an index, or a key. A simple array is like a list. Arrays can also be 2-dimensional, similar to a table.

Example:

An array may be used to store a list of phone numbers, for example:

Phone[1]="0247512345"
Phone[2]="0247513456" ..and so on

Arrays are usually processed using a loop. ‘For’ loops are ideal because they have a built-in counter.

Example:
The following code uses two loops – the first one stores 5 numbers in an array, the second outputs numbers which meet a certain condition. Try to work out exactly what the code does.

```small-basic
For n = 1 To 5
    numbers[n] = Math.GetRandomNumber(100)
    total = numbers[n] + total
EndFor

average = total/5

TextWindow.WriteLine("These are your exceptional numbers:")

For n = 1 To 5
    If numbers[n]>average Then
        TextWindow.WriteLine(numbers[n])
    endif
EndFor
```

Exercise

1. Read at least the first 3 pages of Chapter 10 (from page 51) of the Small Basic manual. (The chapter continues to explain 2-dimensional arrays – read on, if this is making sense!)
2. Copy and run the code in the example above.
3. Write a program that accepts 10 student marks as input; displays the average mark; then displays all class marks that are above average. (hint – modify your code for Q2)
4. ** write a program that generates 100 random numbers (between 0 and 10). Use an array to record the number of times each value was generated. (HINT: count[0] will record the number of times 0 was generated, count[1] .. the number of 1’s, etc)