

### 3 Loops to try...

Dry Run these first to workout what they might do (add line numbers via Excel?). Then run in VB to see if you are correct!

#### Program A

```
Dim L, A as Integer
A=1
For L = 1 to 15 : Rem Change 15 to 30 or 45
Console.write(A & ", ")
A = A * 2 : Rem Change 2 to 3 or 4
Next
```

#### Program B

```
Dim L, A, B as Integer
A=1 : B=0 : Rem Change A to -1
For L = 1 to 15 : Rem Change 15 to 200
Console.write(A & ", ")
A = A + B
B = B + 1
Next
```

#### Program C

```
Dim L, A, B, C as Integer
A=1 : B=1 : C=0 : Rem Change C=0 to C=???
For L = 1 to 15 : Rem Change 15 to 200
Console.write(A & ", ")
C = A + B
A = B
B = C
Next
```

### Program D

```
Dim RandomN As New Random
Dim Score(6) as integer
Dim L, Throw as Integer
For L = 1 to 100
    Throw = RandomN.Next(1, 6)
    Console.write(Throw & ", ")
    Score(Throw)=Score(Throw)+1
Next
Console.WriteLine()
Console.WriteLine()
For L = 1 to 6
    Console.WriteLine(L & " = "&Score(L))
Next
Rem Now Change the code to do a 5 or 8 sided spinner or a dodecahedron!
```

### Program E

```
Dim RandomN As New Random
Dim Score(12) as integer
Dim L, Throw as Integer
For L = 1 to 100
    Throw = RandomN.Next(1, 6) + RandomN.Next(1, 6)
    Console.write(Throw & ", ")
    Score(Throw)=Score(Throw)+1
Next
Console.WriteLine()
Console.WriteLine()
For L = 2 to 12
    Console.WriteLine(L & " = "&Score(L))
Next
Rem Change the code so that...3 die are rolled 1000 times & then 4 8 sided spinners are rolled 3000 times
```

Consider this Quiz (version 1c) change...

```
Option Explicit On
Imports System.IO
Module Module1
    Structure TStudent
        Dim First As String
        Dim Last As String
        Dim Score As Integer
    End Structure
    Dim FileOut As StreamWriter

    Sub Main()
        Dim I, L, x, y, An, St, Qu As Integer
        Dim RandomN As New Random
        Console.WriteLine(" How many Students?") : St = Console.ReadLine()
        Console.WriteLine("How many Questions?") : Qu = Console.ReadLine()
        Dim Student(St) As TStudent
        For I = 1 To St
            Console.WriteLine("First Name of Student " & I & " ?") : Student(I).First = Console.ReadLine()
            Console.WriteLine(" Last Name of Student " & I & " ?") : Student(I).Last = Console.ReadLine()
            Student(I).Score = 0
            For L = 1 To Qu
                x = RandomN.Next(1, 12)
                y = RandomN.Next(1, 12)
                Console.WriteLine("What is " & x & " x " & y & "?") : An = Console.ReadLine()
                If An = x * y Then
                    Console.WriteLine("Correct")
                    Student(I).Score = Student(I).Score + 1
                Else
                    Console.WriteLine("Wrong - The answer was " & x * y)
                End If
                Console.WriteLine(" " & Student(I).First & "'s score is now " & Student(I).Score & " out of " & L)
            Next
            Console.WriteLine(".....Test ended.")
        Next
        Sort()
        FileOut = New StreamWriter("D:\Out.csv")
        FileOut.WriteLine("Last Name, First Name, Score, Out of")
        For I = 1 To St
```

```
        FileOut.WriteLine(Student(I).Last & "," & Student(I).First & "," & Student(I).Score & "," & Qu)
    Next
    FileOut.Close()
End Sub
Sub Sort()

    Dim Swap As Integer
    Swap = False
    Do While Swap = True

        Loop
    End Sub

End Module
```

Use the new code to modify the earlier routines to create csv files of the results to the earlier programs. Modify the general Quiz (1b) to record the results in a csv file!