YEAR 8

Computing@turton

Small Basic ACCELERATED

HOMEWORK BOOKLET

Name

Form

Introduction

Hello Year 8! *In this theme you will learn how to program! As school was cut a bit short last year we didn't have a lot of time to learn programming. We will be creating programs in a language called Small Basic. We will be looking at how the same concepts studied in the algorithms unit such as sequencing, selection and iteration are also used when programming. Everything is connected!*

At the bottom of each homework you will see an icon which will tell you how the homework will be assessed.
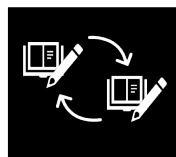*See below to find out what the icons mean:*

Self Assessment: You will mark your work at the start of next lesson.
ENSURE YOU COMPELTE HOMEWORK AS MARKS WILL BE COLLECTED IN!

If you see this on a homework. There will be an Edmodo Quiz based on the homework next lesson.
SO MAKE SURE YOU REVISE AND READ THE INFORMATION CAREFULLY!

If you see this on a homework it means you will be peer assessing the homework next lesson with another student.
MAKE SURE YOU HAVE YOUR HOMEWORK COMPLETED SO YOU CAN SWAP WITH ANOTHER PUPIL!

Failure to submit homework on time will result in a 45-minute detention.
If you lose your homework booklet you will be charged for a replacement and you MUST catch-up on any incomplete homework.

Stuck? Got a question? Email your teacher.

Mr Rifai *(Head of Computing)*	rifaim@turton.uk.com
Miss Davison	davisone@turton.uk.com
Miss Pascoe	pascoej@turton.uk.com

Computing
@turton

H/W1 - Sequencing

3 **functions** are programmed for a robot to follow. The **functions** are:
- Forward(n) – *This moves the robot forward n number of squares*
- TurnLeft() – *This turns the robot left 90 degrees*
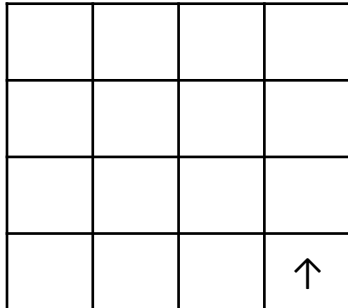- TurnRight() – *This turns the robot right 90 degrees*

Draw the path of the robot through the grids below after the following **algorithms** are executed.
Shade in the squares the robot passes through.
(The robot starts in the square marked by the ↑ facing in the direction of the arrow)
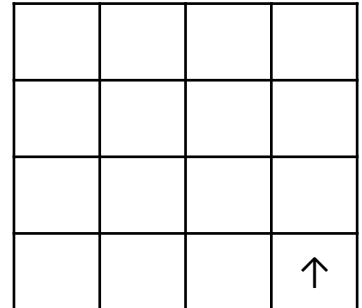
Algorithm 1

```
Forward(1)
TurnLeft()
Forward(2)
TurnRight()
Forward(1)
```
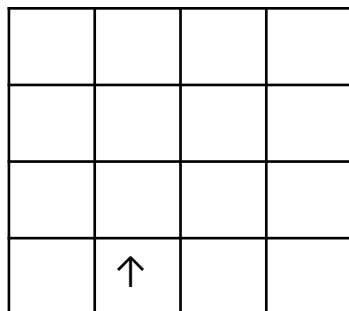
Algorithm 2

```
TurnLeft()
Forward(3)
TurnRight()
Forward(1)
```
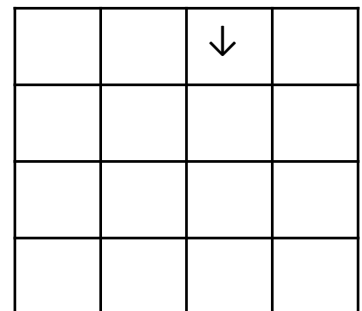
Algorithm 3

```
Forward(2)
TurnRight()
Forward(1)
TurnLeft()
Forward(1)
```

Algorithm 4

```
Forward(3)
TurnRight()
Forward(1)
TurnRight()
Forward(1)
TurnRight()
Forward(2)
```

Define what is meant by sequencing and how this affects the robot?

_____

_____

_____

_____

_____

WWW:	*EBI:*	*Peer assessed by:*

H/W2 – *Knowing the basics…*

Look at the code snippet and answer the questions

```
1  TextWindow.ForegroundColor = "Red"
2  TextWindow.ForegroundColour = "Red"
3
4  TextWindow.WriteLine("Hello World")
5  TextWindow.WriteText("Hello World")
6
7  TextWindow.WriteLine("Hi there Sir, the time is " + Clock.Watch
8  TextWindow.WriteLine("Hi there Sir, the time is " + Clock.Time
9  |
10 name = TextWindow.Enter()
11 name = TextWindow.Read()
```

Q1. Which line is the correct way to change the foreground colour? Line 1 or line 2?

_____

Q2. Which line is the correct way to output text or a message? Line 4 or line 5?

_____

Q3. Which line is the correct way to output the time in your message? Line 7 or line 8?

_____

Q4. Which line is the correct way to input a variable? Line 10 or line 11?

_____

What is the TextWindow and what is it also known as?

_____

_____

What is the purpose of WriteLine?

_____

_____

_____

Comments:

H/W3 – *Examining Code*

Look at the code snippets and answer the questions

```
1 TextWindow.WriteLine("This is your homework!")
```

1. What will this code output (display on screen)?

_____

2. What colour is the part of the code you would change to output something else?

_____

```
1 TextWindow.Write("Enter your name: ")
2 name = TextWindow.Read()
3 TextWindow.WriteLine("Hello " + name)
```

Explain the code above line by line using the following words in your sentences:
    Output   *Variable*   *Input*   *Console*   *BONUS WORD: Concatenation*

1. _____

    _____

2. _____

    _____

3. _____

    _____

	WWW:	*EBI:*	*Peer assessed by:*

H/W4 – *Variables*

What is a variable? _____

_____

_____

Look at the code snippet below and answer the following questions:

```
TextWindow.WriteLine("This department is called Computing at Turton")
TextWindow.WriteLine("Computing at Turton has 3 members of staff")
TextWindow.WriteLine("Computing at Turton teaches years 7 - 13")
TextWindow.WriteLine("Computing at Turton teaches ICT and Computing")
```

Why is the program above inefficient?

_____

_____

_____

How can it be made more efficient?

_____

_____

_____

Looking at the screenshot from Mario to the left list some variables which may be in use:

• _____

• _____

• _____

• _____

Comments:

Comp^uting
@turton

H/W5 – Selection Quiz

Have a go at this multiple-choice quiz. We will be marking this next lesson. For additional revision material type out the bitesize link below into a browser:
https://www.bbc.co.uk/bitesize/guides/z2p9kqt/revision/1

1 What is selection?

○ Repeating a number of steps

○ A decision point in a program

○ The order in which instructions are carried out

2 Why is selection important?

○ Selection allows a number of steps to be repeated

○ Selection allows multiple paths through a program

○ Selection determines the order in which instructions are carried out

3 What is a statement?

○ A statement is a single instruction

○ A statement is a block of code

○ A statement is a repeated instruction

4 In programming how is selection implemented?

○ IF-OTHERWISE

○ IF-ELSE

○ DO-ELSE

5 How many paths through a program does an IF statement allow?

○ One path

○ Three paths

○ Two paths

Comp**u**ting
@turton

6 Which statement is used to add further choices to a program in Python?

○ ELSE IF

○ DO OTHERWISE

○ elif

7 What does an IF statement represent?

○ A question

○ An answer

○ An iteration

8 What does an ELSE statement represent?

○ A question

○ The path to follow when the answer to the question is True

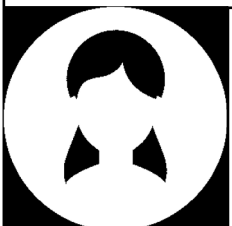○ The path to follow when the answer to the question is False

9 What does ELSE IF represent?

○ An extra answer

○ An extra choice

○ An extra iteration

10 In programming what is the answer to an IF question?

○ Yes or No

○ Positive or Negative

○ True or False

Comments:

H/W6 – *Iteration*

What is iteration? _____

_____

_____

```
For i = 10 To 1 Step -1
  TextWindow.WriteLine(i)
EndFor
```

Explain what is happening in the program above:

_____

_____

_____

_____

_____

_____

CHALLENGE: Can you re-write the program using a WHILE loop?

_____

_____

_____

_____

_____

_____

	WWW:	*EBI:*	*Peer assessed by:*

Comp**u**ting
@turton

ᴴ/ᴡ7 Keyword Revision

Ahead of the End of Theme Test. Write down the definitions of the keywords below. Once complete make sure you know and have revised/memorised all of the keywords.
HINT: Use the knowledge organiser!

Keyword	Definition
Algorithm	
Sequence	
Selection	
Iteration	
Variable	
Syntax and Syntax Error	
String	
Integer	

Edmodo

Revision for End of Theme Test

Computing @turton