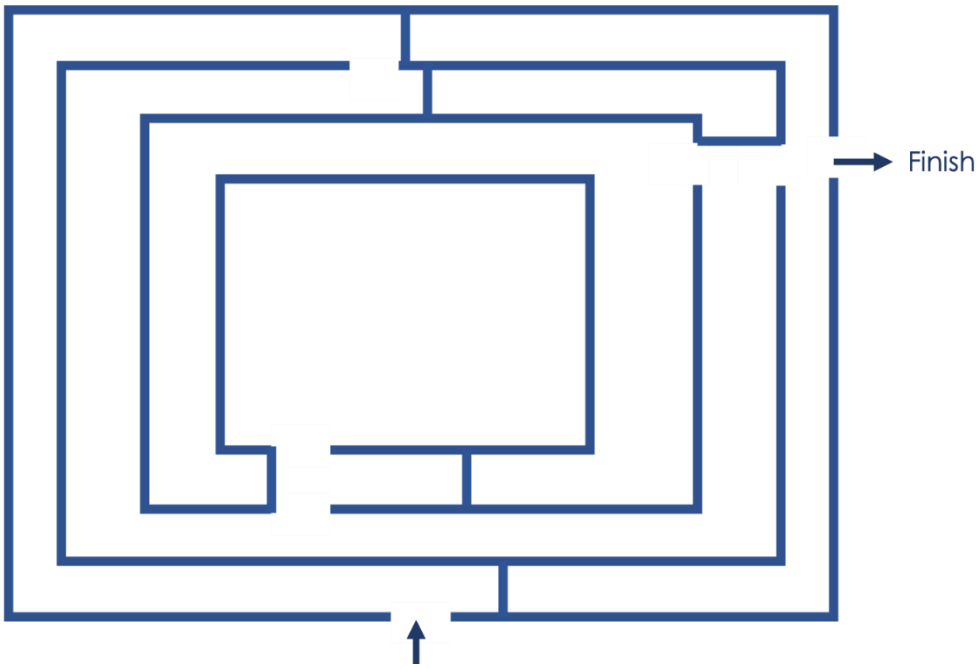
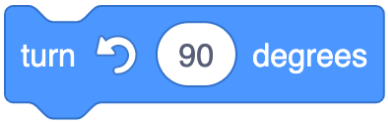
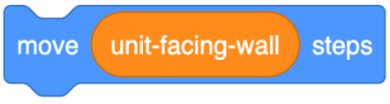
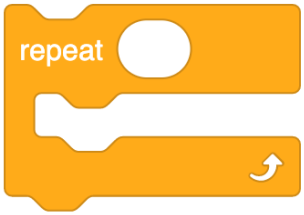
NAME : _____ GRADE: _____

COUNT-CONTROLLED ITERATION

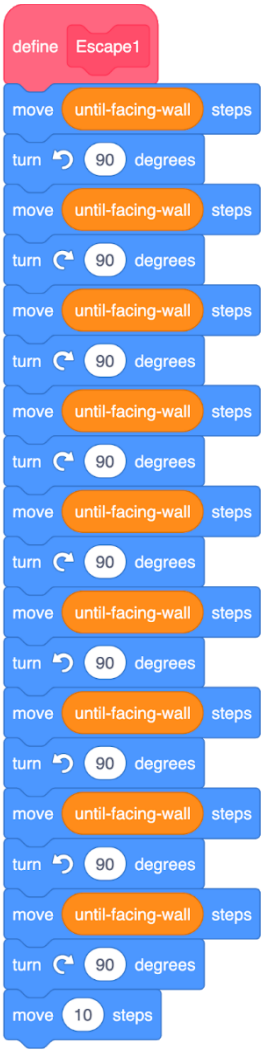
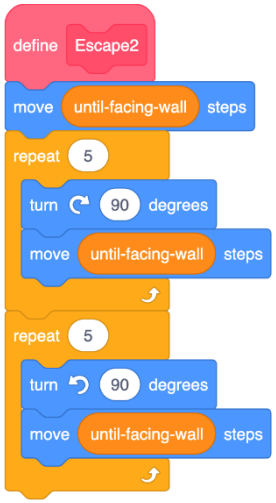
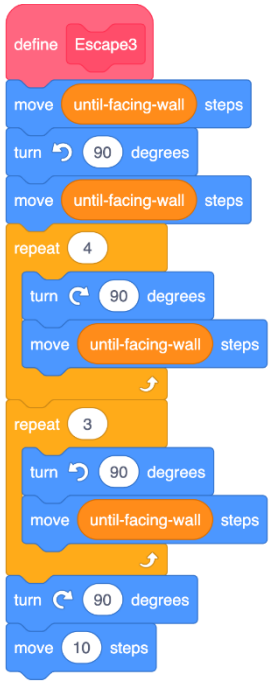
Explorer task: Escape the maze



In a different lesson, learners were given the task of writing a subroutine to help Scratch cat escape the maze. They were allowed to use the following blocks:

	This will turn the cat 90 degrees to the **left**
	This will turn the cat 90 degrees to the **right**
	This informs Scratch cat to continue to walk forward until they are facing a wall
	This is a count-controlled loop. The number placed after the word 'repeat' will instruct the computer how many times to execute the blocks of code placed within this **Repeat** block.

Look at the subroutines below. When executed, two of the subroutines will help Scratch cat escape the maze.

Subroutines			
Escaped? (Yes/No)			

Question	**Your answer** ▿

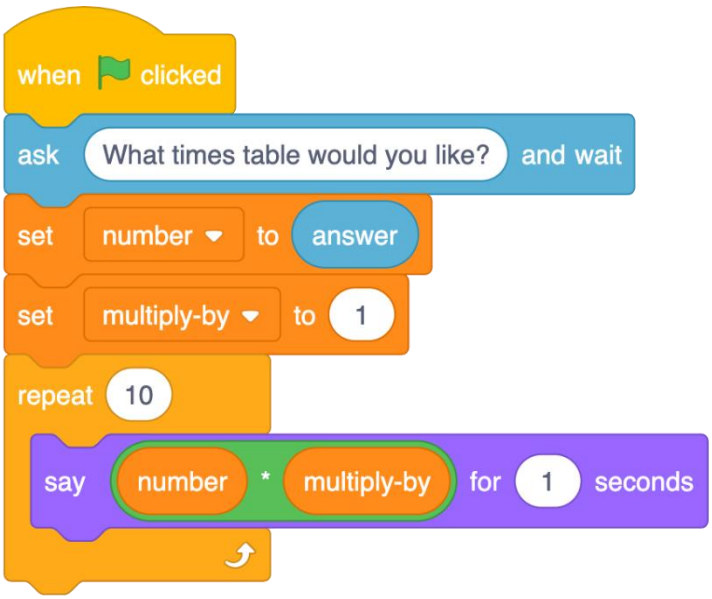
NAME : _____ GRADE: _____

Debugging

The program below asks the user which times table they would like to know. The Scratch cat program should then say the times table for them. Unfortunately, this program doesn't output the correct data.

Run the program for yourself.

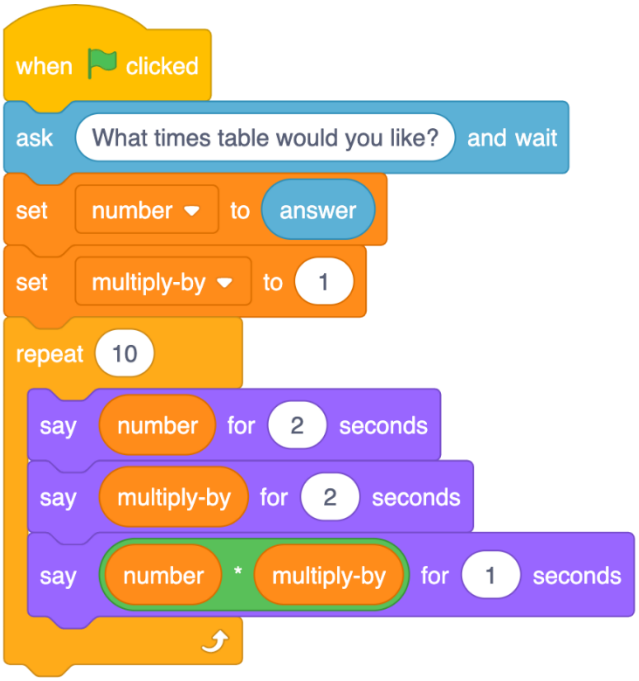
The program can be found here: [times table program](ncce.io/TimesTableDebugging) (ncce.io/TimesTableDebugging)



Questions	Your answers ▿
• Describe what happens when you run the program.	

One technique you can use to help you debug code is to add lines of code that show the variables that may play a part in the bug.

Add two lines of code that 'say' the value of your variables each time the program iterates. It should now look like the following:



For this exercise, assume that when asked 'What times table would you like?' a number '2' was entered. Note the values of the two variables and the final output just for the first four iterations.

Iteration	**Value of:** number	**Value of** multply-by	**Output** number * multiply-by
1			
2			
3			

4			

Program code here to test out the theory.

Questions	**Your answers** ▿
● What did you discover was the bug/error with the program?	
● Can you recommend a way of fixing this bug?	

Explorer tasks

1. Remove the two print lines from the code
2. Fix the bug so that you have a working program