
BLOCKY GAMES - MAZE PROGRAMMING

Written by Lucy Ikpesu

CLASS DESCRIPTION

In this class, students will explore their critical thinking skills to solve the Maze programming puzzle.

TOTAL CLASS TIME: 100 minutes

CLASS OUTCOME

By the end of this class, students will understand how to use codes to provide solutions for Maze puzzles.

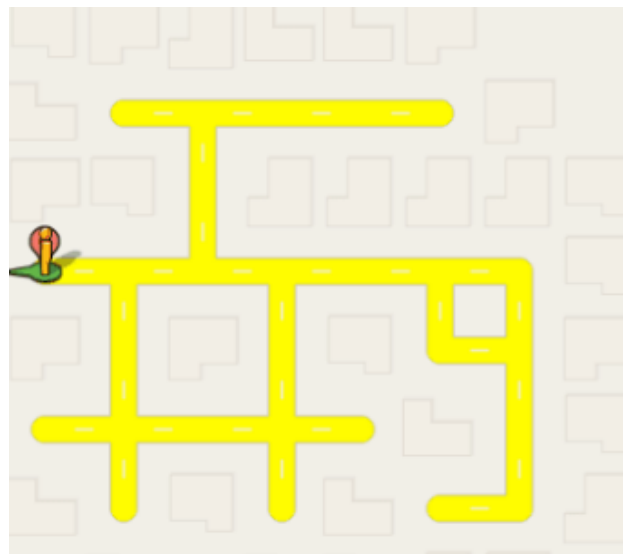
Students will understand and write block codes and the basic concept of JavaScript

Students will be able to apply basic Mathematics in the Maze puzzles

By the end of this puzzle, players are ready to use conventional text-based languages.

INTRODUCTION

[Blockly Games](#) is a series of educational games that teach programming. It is designed for children and beginners who have not had prior experience with computer programming. Blockly Games is a Google project to encourage tomorrow's programmers. The games are designed to be self-paced and self-teaching. It can be used both inside and outside the classroom.



Maze Programming is an introduction to loops and conditionals. It starts simply, but every level is more challenging than the last. A maze is a complex system of paths or tunnels in which, it is easy to get lost, and it uses essentially the drag and drop, easy-to-code technique!

MATERIALS NEEDED

- A computer
- Maze software (can be used offline or online)
 - ❖ Online software: <https://blockly.games/maze?lang=en>
 - ❖ Offline Software:
<https://github.com/google/blockly-games/wiki/Offline>
- Pen and notebook.

PROCEDURES

Step 1: Drag and Drop the codes as shown in the pictures for each task.

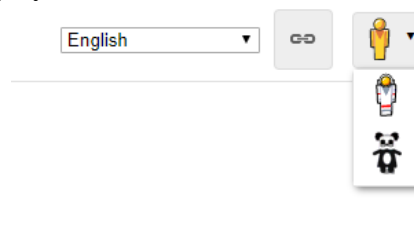
Step 2: Each block shows lines of codes on the JavaScript IDE which can be accessed by clicking the button on the left-side of the programming interface.

Step 3: Run your program to ensure it works exactly how it was programmed.

Step 4: If it doesnt program doesnt work, keep exploring the blocks-of-code till it is gotten correctly.

NOTE:

- “Move Forward, turn right, turn left etc.” block moves the robot until it get to the destination
- “Run program” button makes the robot to do what the block says.
- Choose your favourite player (robot) from this menu.



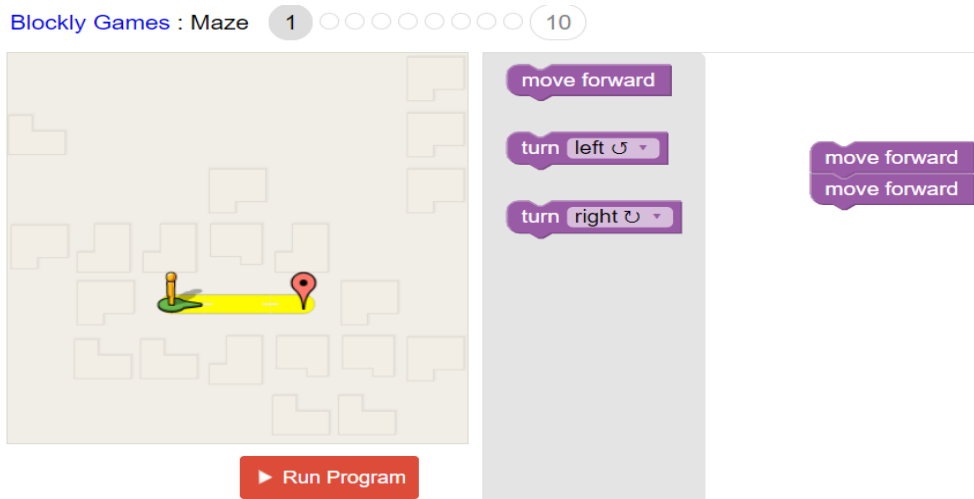
- It is not compulsory to utilize all the blocks. The program will still run if the codes are correct.
-

LET'S CODE

TASK 1: Program the robot to move forward to the required destination.

- “MoveForward” block moves the robot forward until it get to the destination
- “Run program” button makes the robot to do what the block says

Blockly Games : Maze 1 ○○○○○○○○○○ 10



move forward

turn left ↶

turn right ↷

move forward

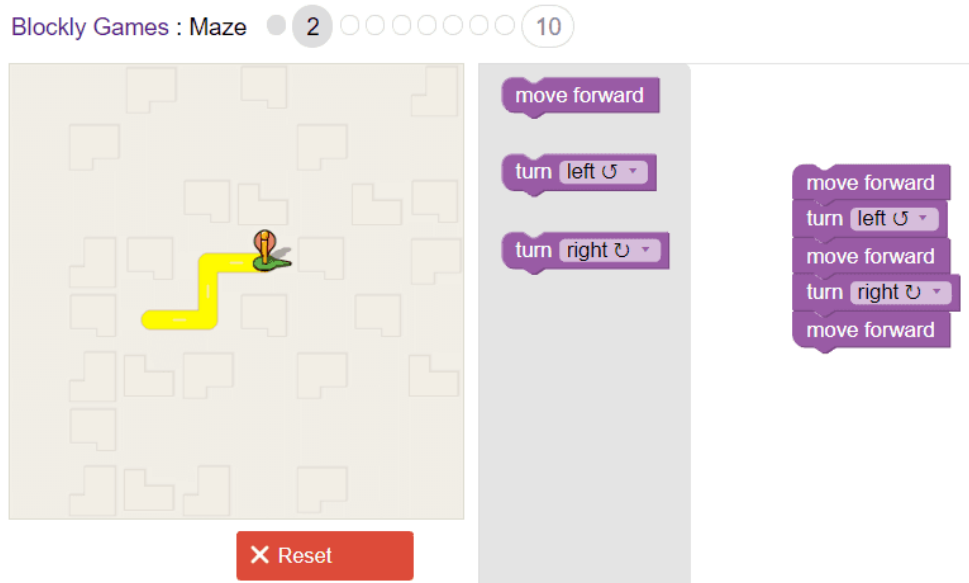
move forward

▶ Run Program

TASK 2: Program the robot to move forward to the required destination

- Turn right, Turn Left makes the robot turns in direction of 90 degree

Blockly Games : Maze ● 2 ○○○○○○○○○○ 10



move forward

turn left ↶

turn right ↷

move forward

turn left ↶

move forward

turn right ↷

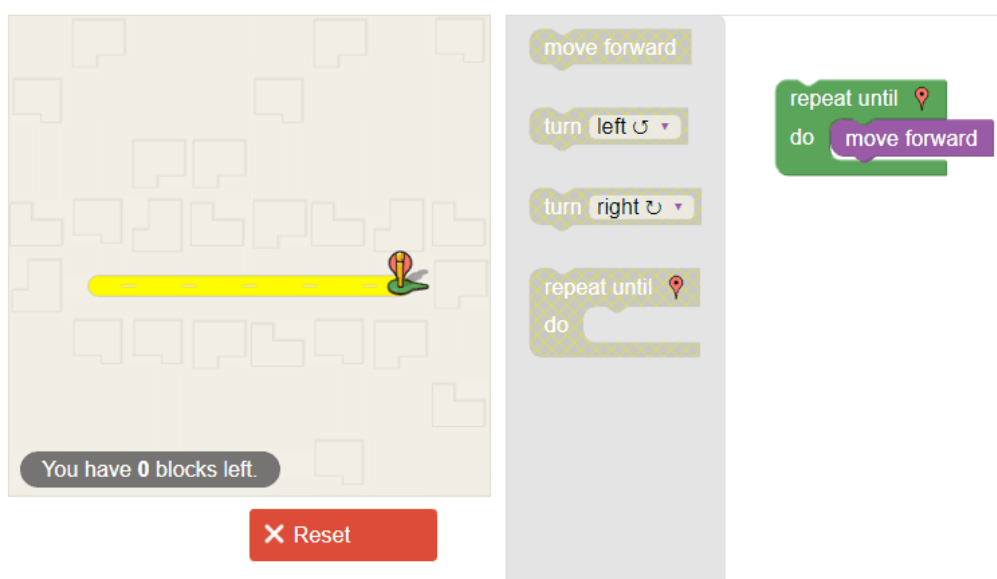
move forward

✕ Reset

TASK 3: Program the player to move forward to the required destination

- Reach the end of this path using only two blocks. Use 'repeat' to run a block more than once.

Blockly Games : Maze ●●● 3 ○○○○○○ 10



You have 0 blocks left.

Reset

move forward

turn left ↶

turn right ↷

repeat until 📍

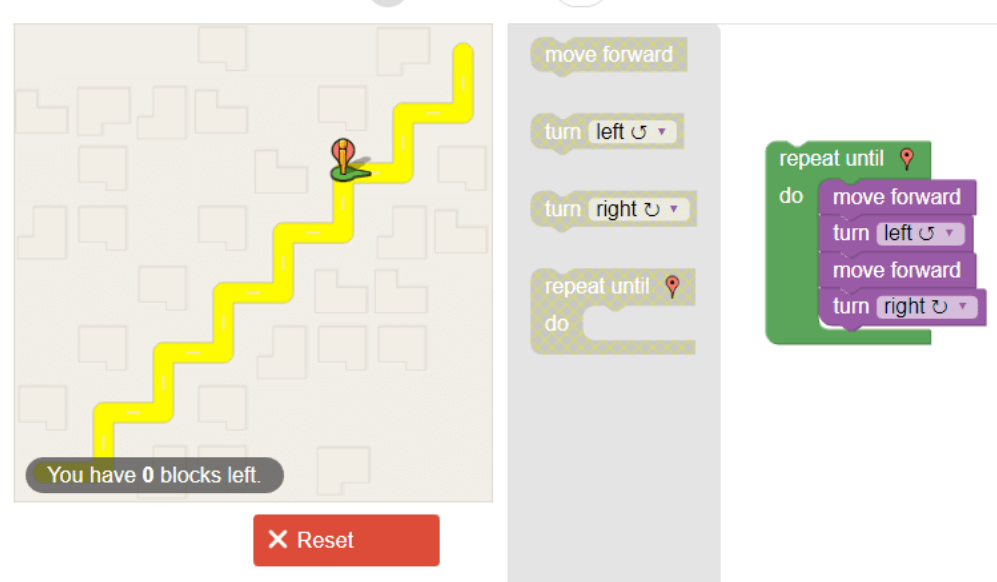
do

move forward

TASK 4: Program the player to move forward to the required destination

- You can fit more than one block inside a 'repeat' block.

Blockly Games : Maze ●●●● 4 ○○○○○○ 10



You have 0 blocks left.

Reset

move forward

turn left ↶

turn right ↷

repeat until 📍

do

move forward

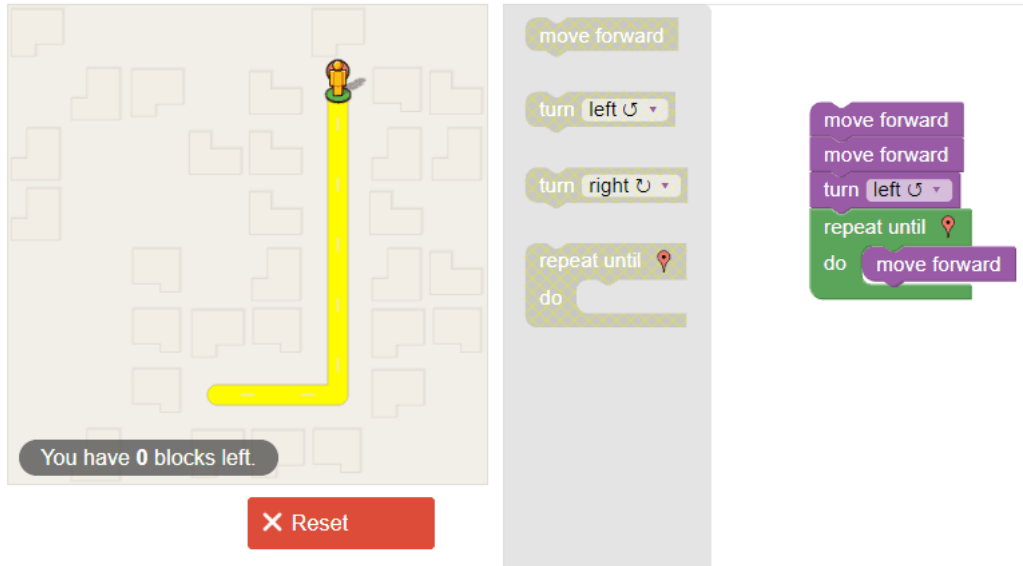
turn left ↶

move forward

turn right ↷

TASK 5: Program the player to move forward to the required destination.

Blockly Games : Maze ●●●●● 5 ○○○○ 10



You have 0 blocks left.

Reset

```

move forward
turn left
turn right
repeat until
do

```

```

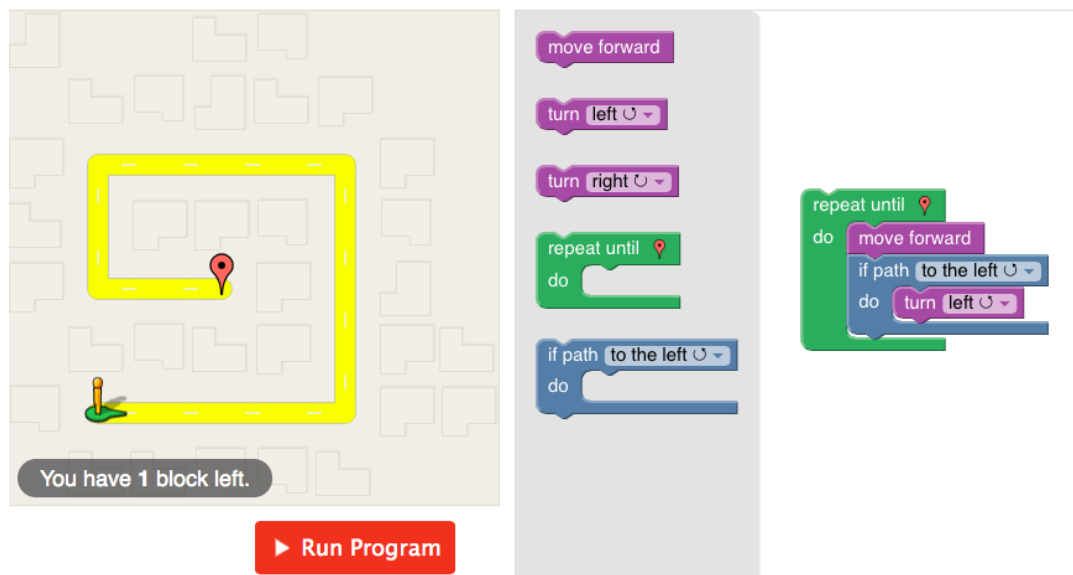
move forward
move forward
turn left
repeat until
do move forward

```

TASK 6: Program the player to move forward to the required destination

- An 'if' block will do something only if the condition is true. Try turning left if there is a path to the left.

Blockly Games : Maze ●●●●● 6 ●●●● 10



You have 1 block left.

Run Program

```

move forward
turn left
turn right
repeat until
do
if path to the left
do turn left

```

```

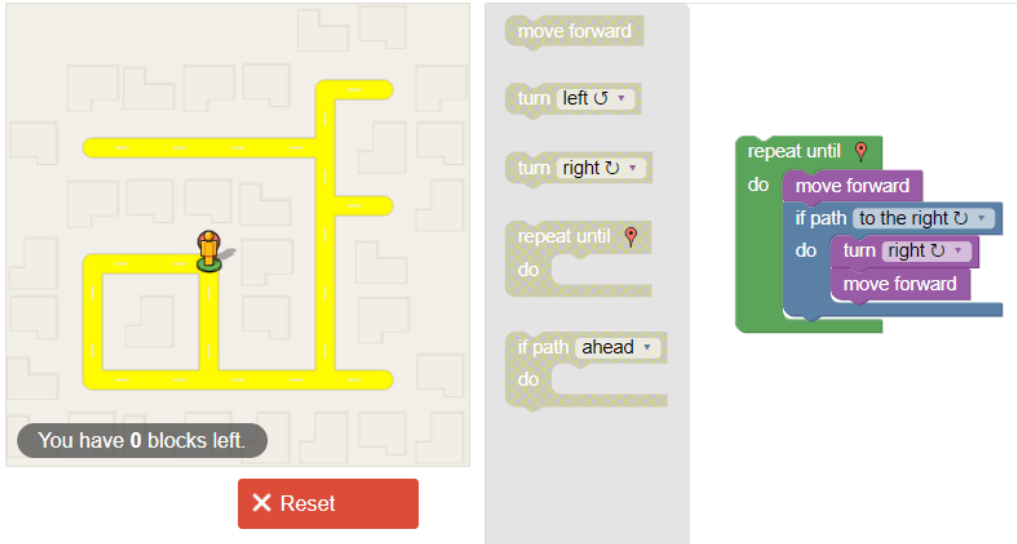
repeat until
do
move forward
if path to the left
do turn left

```

TASK 7: Program the player to move forward to the required destination

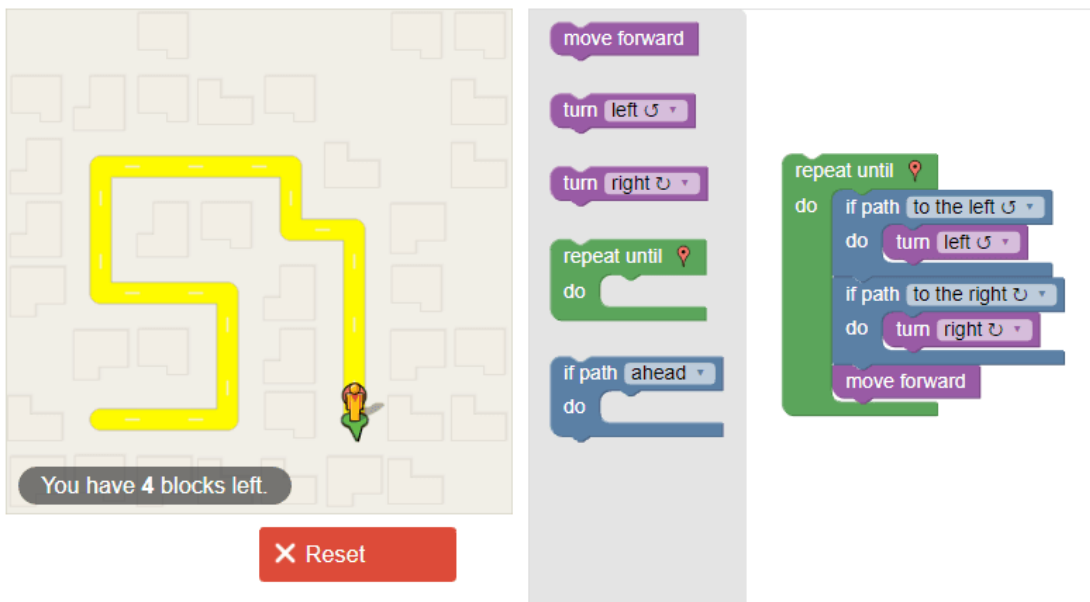
- Click on ahead ▾ in the 'if' block to change its condition.

Bloky Games : Maze ●●●●●●● 7 ○○ 10



TASK 8: Program the player to move forward to the required destination

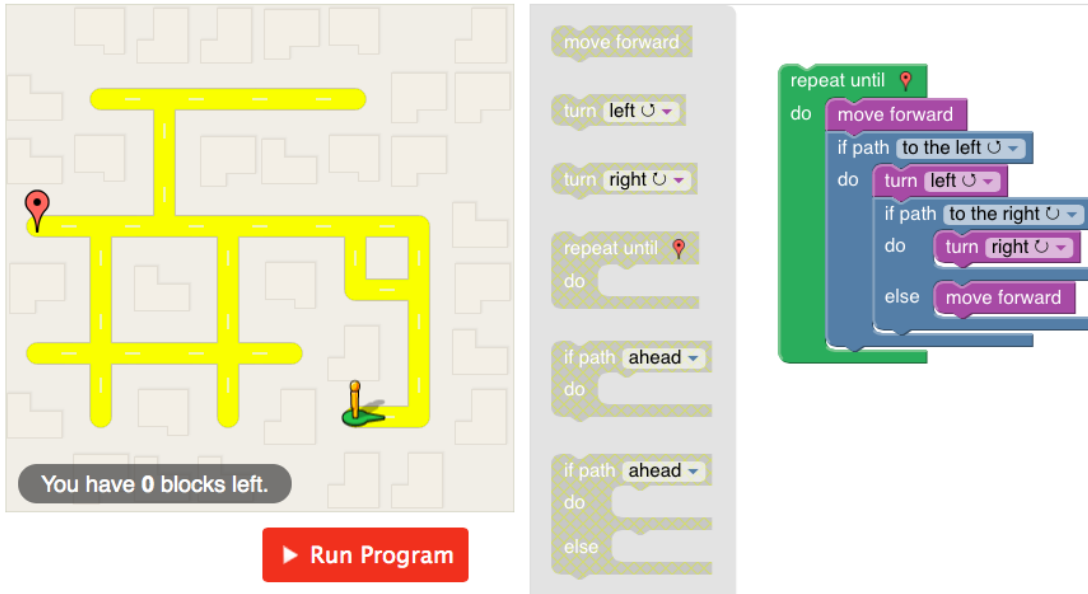
Bloky Games : Maze ●●●●●●● 8 ○ 10



TASK 9: Program the player to move forward to the required destination

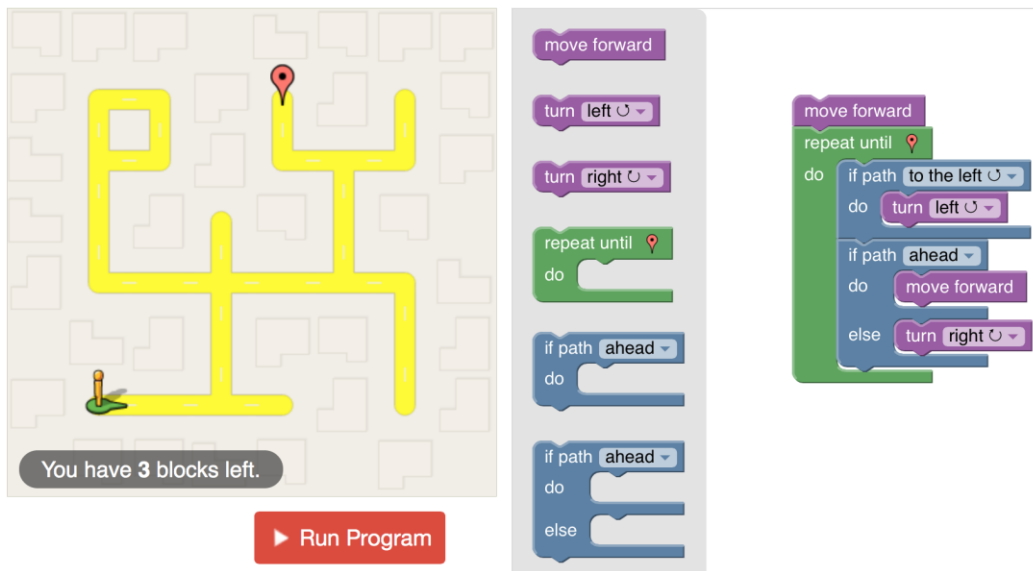
- If-else blocks will do one thing or the other.

Blockly Games : Maze ●●●●●●●●●● 9 10



TASK 10: Program the player to move forward to the required destination

Blockly Games : Maze ●●●●●●●●●● 10



OBSERVATION

- The movement of the robot is dependent on what codes are used.

-
- The “If” conditional code makes the program check if it satisfies the statements.

REFERENCES

<https://blockly-games.appspot.com/maze>