SEQUENCING AND LOGIC

Application Based Questions

1. Write down three examples of sequences, and loops in your daily life.

Sequence:

a.

b.

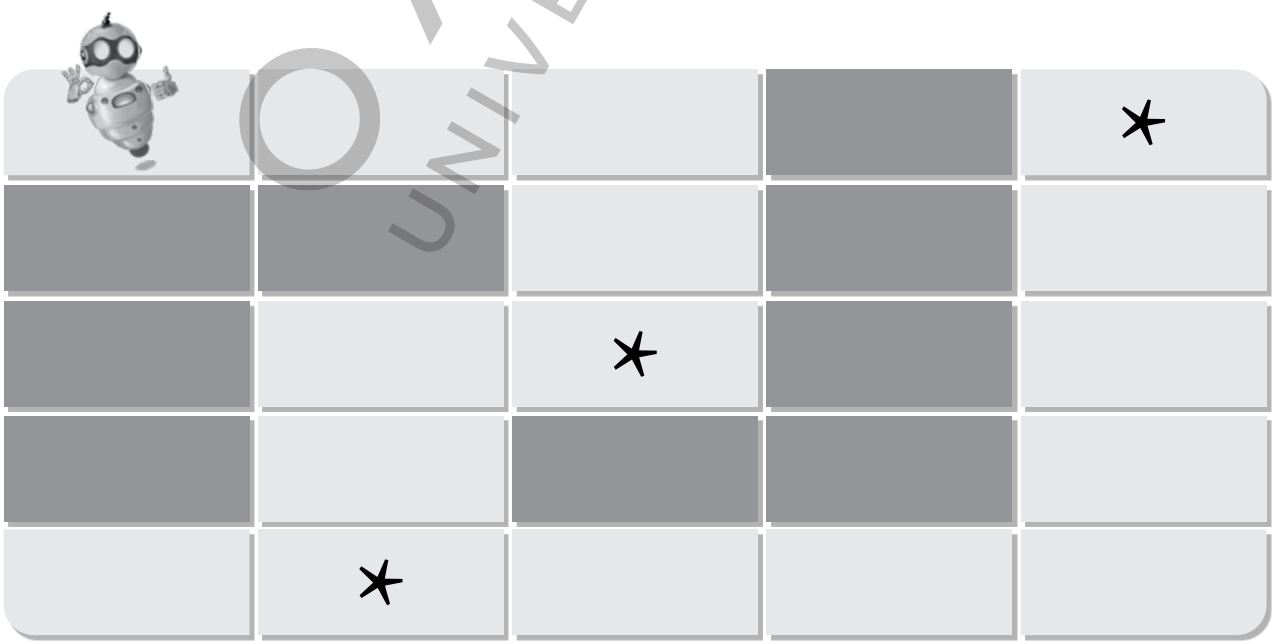
Loop:

a.

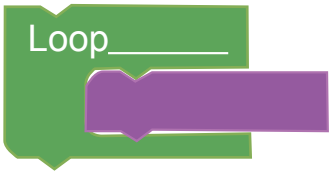
b.

Collecting Stars

2. Help Toggle find all three shiny stars in the maze. Computers need exact steps to function.

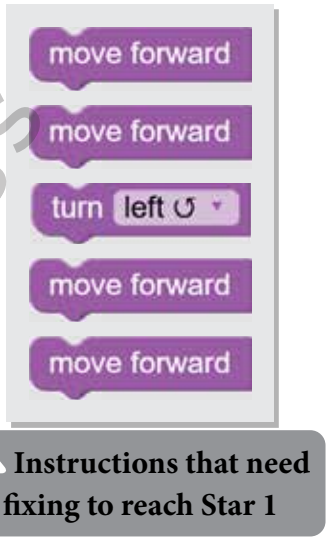


These are the commands you can use, like coding blocks:



Reach the First Star (Find the Mistake!)

Maham wrote these instructions to get to the first star (Row 2, Col 2), but she made a mistake. Trace the path on the maze with your finger, following these steps.



Think about it:

1. When you followed all 4 steps, did you land exactly on the first star? (Circle One) **Yes / No**

2. If not, where did you end up? (Tell the square, like Row _, Col _)

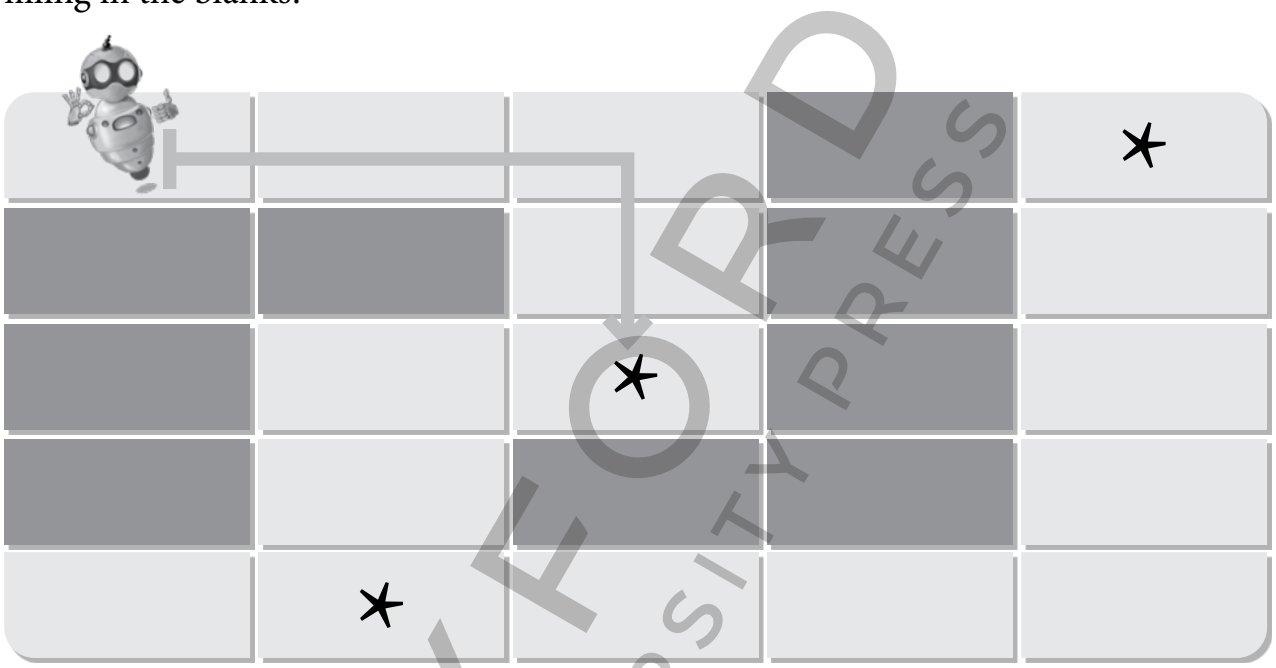
3. Look at the steps again and the maze. Which step or steps should be changed or removed so you stop exactly on Star 1?

4. Write the **correct** instructions below to get from 'S' to the **first** star (Row 2, Col2). Make sure you end up right ON the star! Remember your character starts facing RIGHT.

Collecting Stars Part 2

Collect the Second Star

You are now at the first star (Row 2, Col 2), and you are facing the direction from your last instruction above. Use the hints below to get to the second star (Row 3, Col 4) by filling in the blanks!



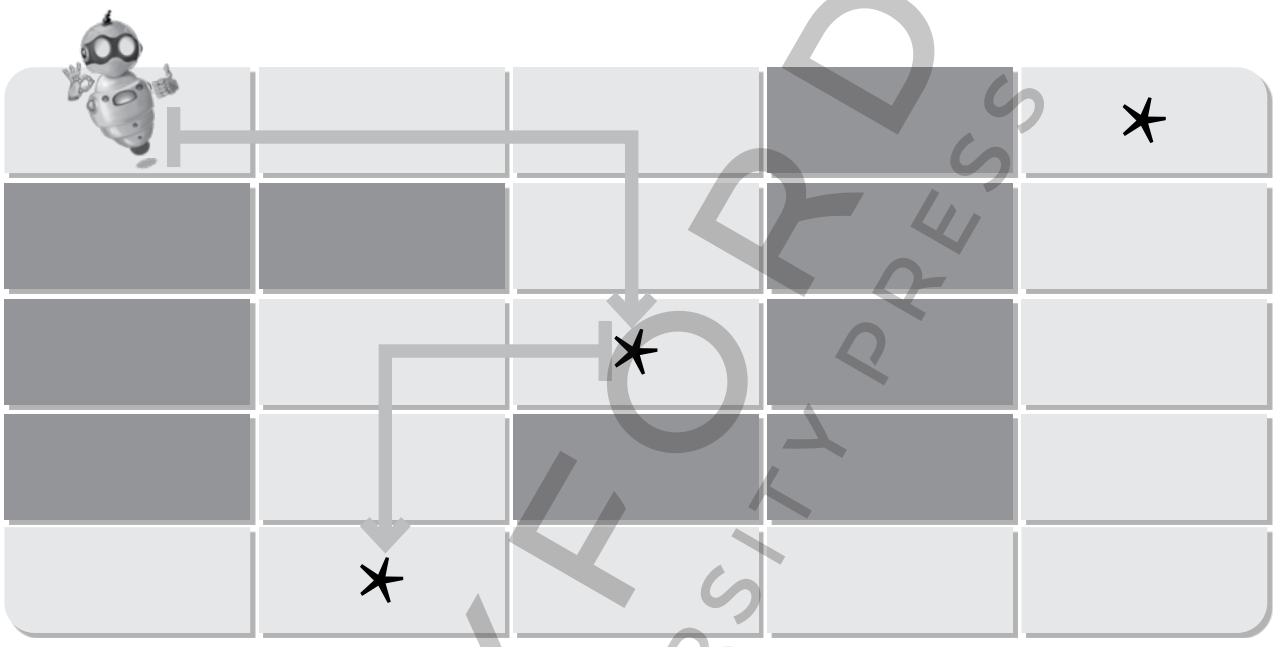
Instructions from Star 1 to Star 2:

1. Move _____
2. Turn _____ (Hint: To face the correct way!)
3. Move _____ steps Forward (Hint: You need to move more than 1 square this time!)
4. Collect the star!

Collecting Stars Part 3

Collect the Third Star

You are now at the second star (Row 3, Col 4), and you are facing the direction from your last instruction above. Now, write ALL the instructions yourself to get to the third star (Row 5, Col 1)! Think carefully about each turn and step.



Instructions from Star 2 to Star 3:

SEQUENCING AND LOGIC

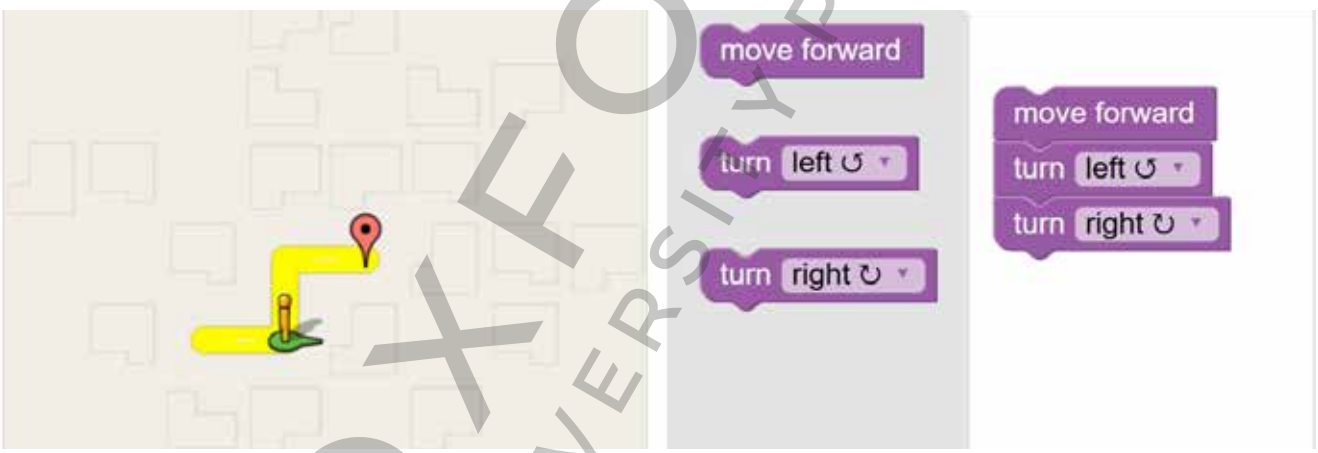
Application Based Questions

Codes are instructions that a computer (or our character) can understand and follow exactly. Putting those instructions in the right order is called **sequencing**.

On Blockly, our coding blocks are:

- **move forward**
- **turn left**
- **turn right**
- **repeat until [goal]**
- **if path [direction] do**

Activity 1: Look at the following spiral maza:



a. Spot the mistake and write the code to get the character from the Start (flag) to the first corner of the spiral path.

1. What does the character need to do first? And then? What needs to happen at the first corner? Write the sequence of blocks here to get from start to finish:

2. Why is the *order* of these blocks important?

A Loops and Conditions

Instead of writing the repeating blocks many times, we can use the repeat until [goal] block. This block tells the computer to keep doing the blocks inside it until the character reaches the target pin. Write the code using the given blocks. You can use five blocks only to solve this.

1. Write the sequence of blocks here to get from start to finish:

2. Using a loop block is an example of using logic in coding. How does using this **logic** make writing code easier?