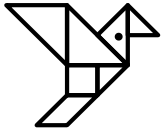


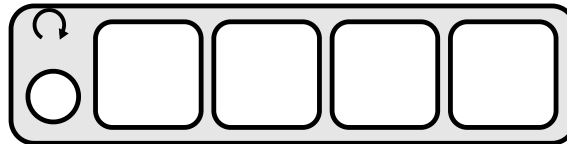
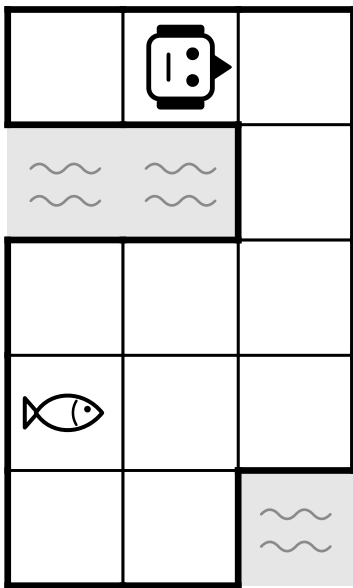


Learn a new puzzle

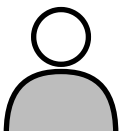
Repeat Loops



Fill in the blanks so the robot stops on the picture.
The cards in the box repeat.



- 1 Find the part of the path that repeats: moves and turns.
- 2 Circle it each time. Count the circles: that is the number.
- 3 Follow your program to check. Turn the paper if it helps.



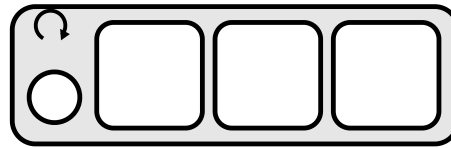
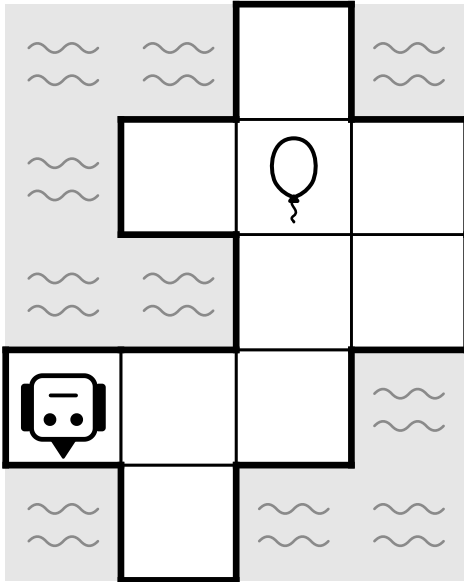
Which steps does the robot do again and again?



1

Repeat Loops

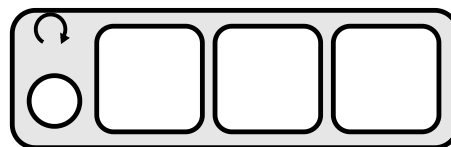
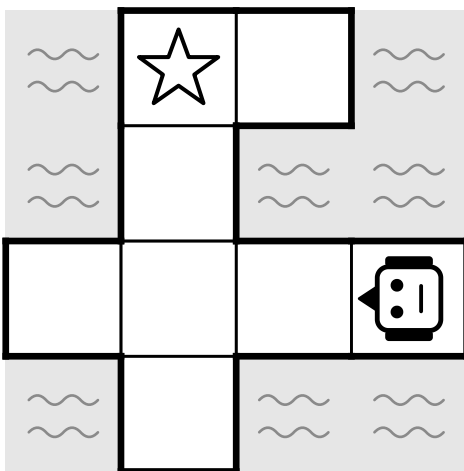
Fill in the blanks so the robot stops on the picture. The cards in the box repeat.



2

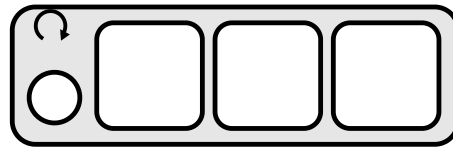
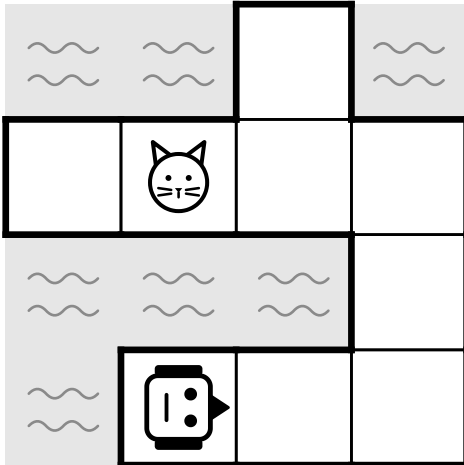
Repeat Loops

Fill in the blanks so the robot stops on the picture. The cards in the box repeat.

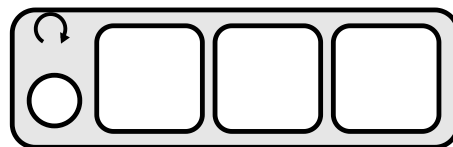
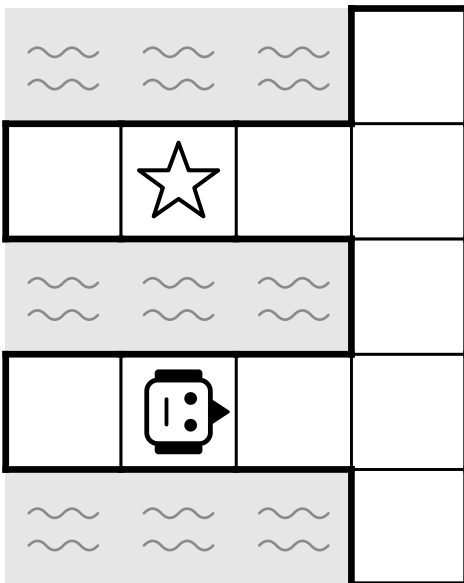


**3****Repeat Loops**

Fill in the blanks so the robot stops on the picture. The cards in the box repeat.

**4****Repeat Loops**

Fill in the blanks so the robot stops on the picture. The cards in the box repeat.

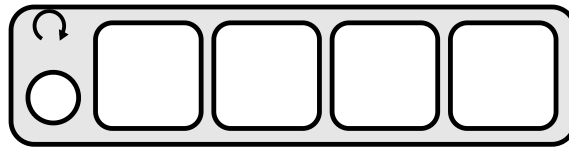
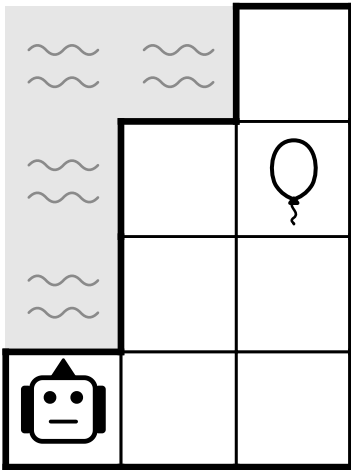




5

Repeat Loops

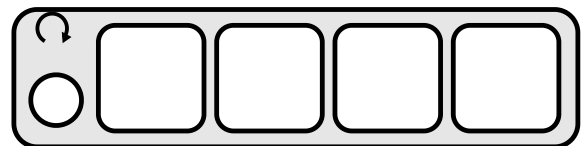
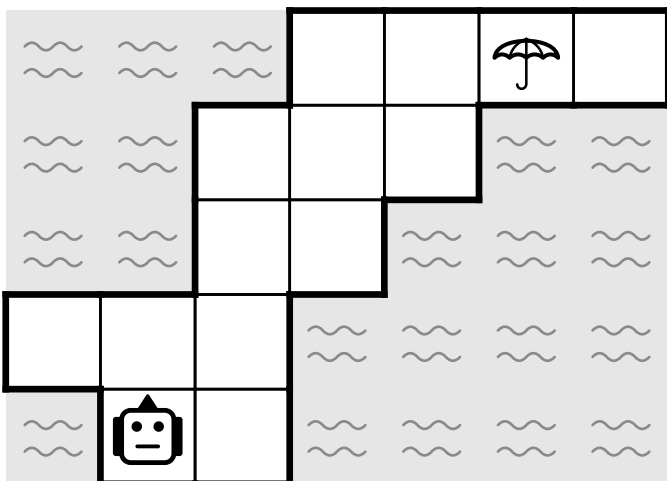
Fill in the blanks so the robot stops on the picture. The cards in the box repeat.



6

Repeat Loops

Fill in the blanks so the robot stops on the picture. The cards in the box repeat.

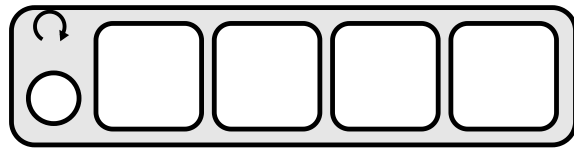
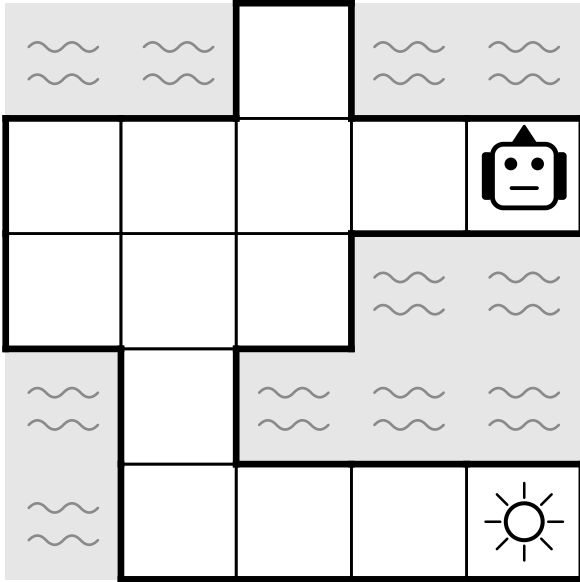




7

Repeat Loops

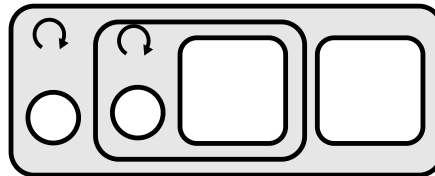
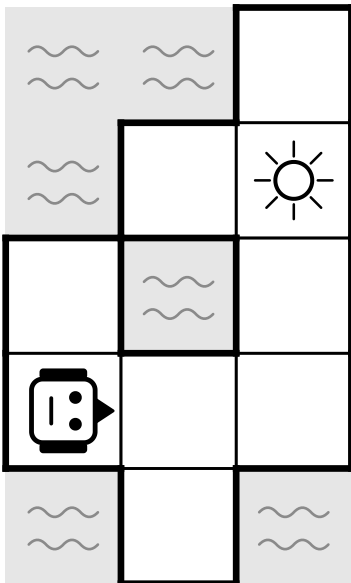
Fill in the blanks so the robot stops on the picture. The cards in the box repeat.



8

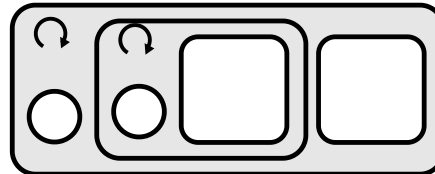
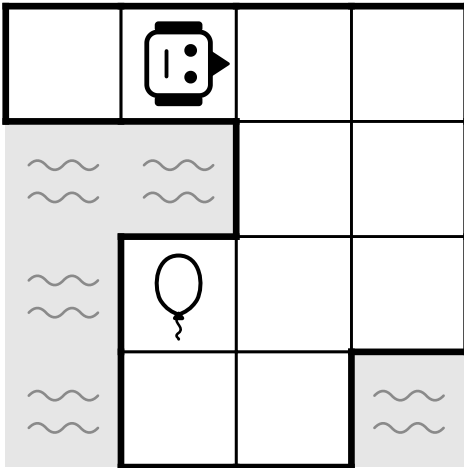
Repeat Loops

Fill in the blanks so the robot stops on the picture. The cards in the box repeat.

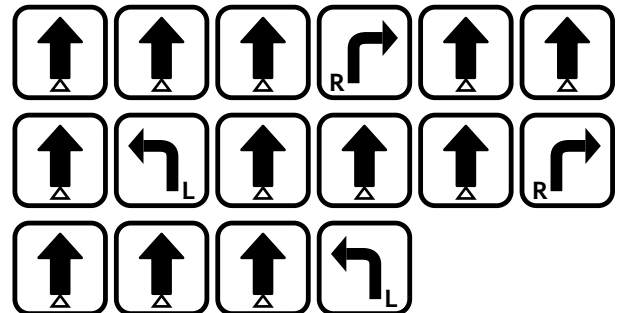
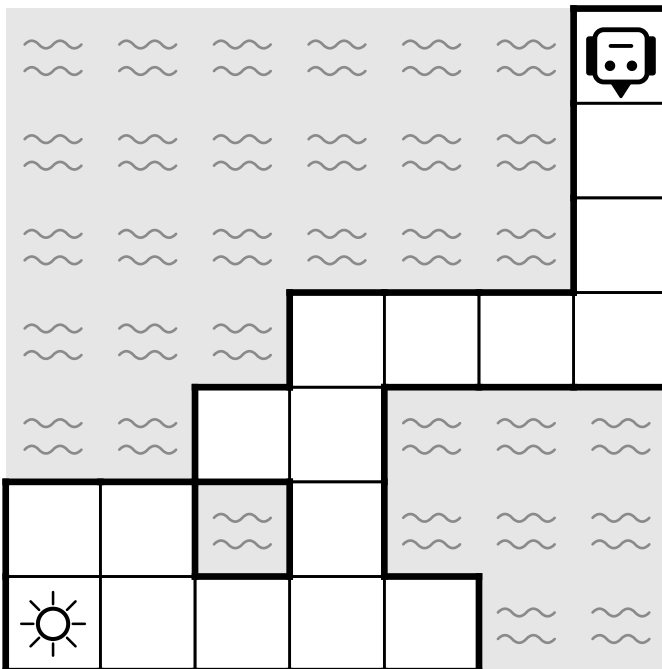


**9****Repeat Loops**

Fill in the blanks so the robot stops on the picture. The cards in the box repeat.

**10****Repeat Loops**

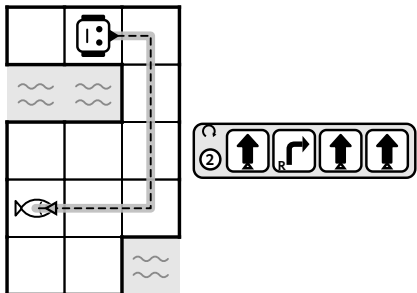
This program works but is long. Write it again with the fewest cards. You may put a repeat box inside another repeat box.

**Shorter:**

Answers

For grown-ups. Cut off or keep this page aside until the puzzles are done.

Learn · Repeat Loops



The diagram shows a 5x5 grid with a robot at the bottom-left cell (row 5, column 1). A dashed line indicates a path from the robot to a light bulb at row 3, column 3. The path starts at the robot, moves right to row 5, column 3, then up to row 3, column 3. To the right of the grid is a control panel with four buttons: a circular arrow (reset), a button with the number 2, a left-turn arrow, and an up arrow. The up arrow button is highlighted with a thick border.

The path repeats "turn left, forward, then forward" 2 times.

The path repeats "forward, forward, then turn right" 2 times.

The path repeats "forward, forward, then turn left" 3 times.

The diagram shows a 3x3 grid with a robot (a small black square with a face) at the bottom-left cell (row 3, column 1) and a star at the top-middle cell (row 1, column 2). A dashed line indicates a path from the robot to the star: (3,1) to (3,2) to (3,3) to (2,3) to (1,2). To the right of the grid is a sequence of four move icons: a counter-clockwise rotation (C), a forward move (F), another forward move (F), and a right turn (R).

The path repeats "forward, forward, then turn left" 3 times.

A 3x3 grid world environment. The top-left cell (0,0) is shaded gray and contains three wavy lines representing water. A robot (a small black head with a white face) is in the bottom-left cell (2,0). A light bulb is in the middle-right cell (1,2). A dashed line shows a path from the robot to the light bulb: (2,0) → (2,1) → (2,2) → (1,2). To the right of the grid is a sequence of actions in a box: a '2' with a circular arrow, a '5' with a circular arrow, an upward arrow, a leftward arrow, and another upward arrow.

The path repeats "turn right, forward, turn left, then forward" 2 times.

[illegible]

The path repeats "forward, turn right, forward, then turn left" 4 times.

The environment is a 5x5 grid. The robot starts at (1, 4) and the goal is at (4, 1). Obstacles are located at (1, 1), (1, 2), (1, 3), (2, 1), (2, 2), (2, 3), (3, 1), (3, 2), (3, 3), (4, 2), (4, 3), (4, 4), and (4, 5). The robot's path is shown as a dashed line: (1, 4) → (2, 4) → (3, 4) → (3, 3) → (3, 2) → (3, 1) → (4, 1).

The path repeats "turn left, forward, forward, then forward" 3 times.

A 3x3 grid with a robot at (1,1), a light at (2,3), and obstacles at (1,2), (1,3), (2,1), (2,2), (3,1), (3,2), and (3,3). A dashed line shows the path from the robot to the light.

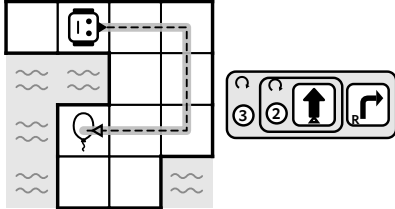
The path repeats "forward 2 times, then turn left" 2 times.

Answers

Answers

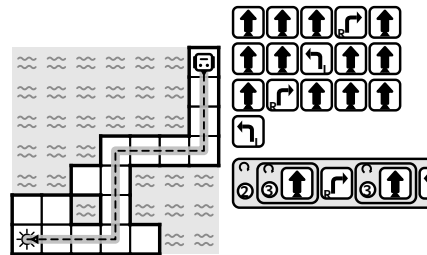
For grown-ups. Cut off or keep this page aside until the puzzles are done.

#9



The path repeats "forward 2 times, then turn right" 3 times.

#10



The path repeats "forward 3 times, turn right, forward 3 times, turn left" 2 times: that is the big box. "forward 3 times" goes in a small box inside it. 7 cards instead of 16.