

Guide the Robot

Write arrow programs to get the robot to the flag, go around trees and predict where it stops.

Name _____ Date _____ Class _____

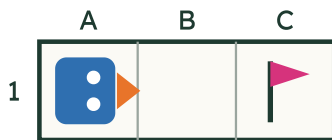
Learning objective: I can write a simple program (algorithm) to move a robot.

✓ I can use forward and turn cards ✓ I can go around a tree ✓ I can predict where the robot will stop

Arrow cards: ↑ = move forward one square ↶ = turn left ↷ = turn right. The robot moves the way its orange nose points.

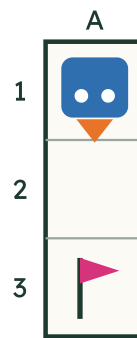
1 Get to the flag Draw arrow cards in the boxes. Use one box for each card.

Robot 1



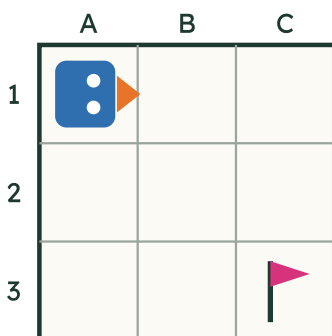
My program:

Robot 2



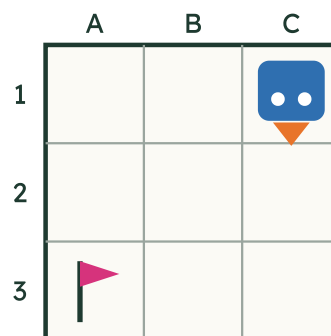
My program:

Robot 3



My program:

Robot 4

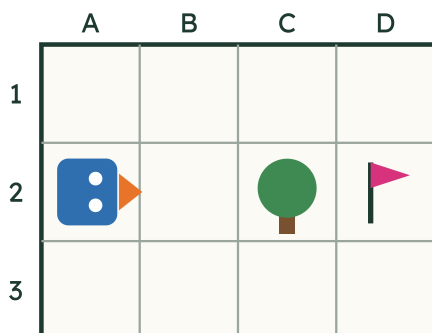


My program:

Guide the Robot

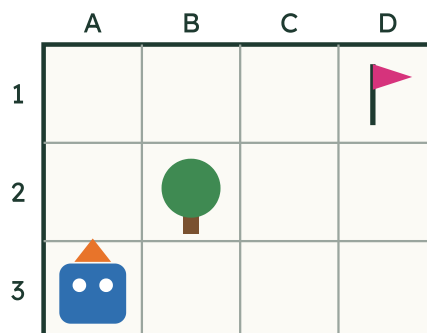
- 2 Watch out for trees!** The robot cannot move onto a tree. Find a way around.

Robot 5



My program:

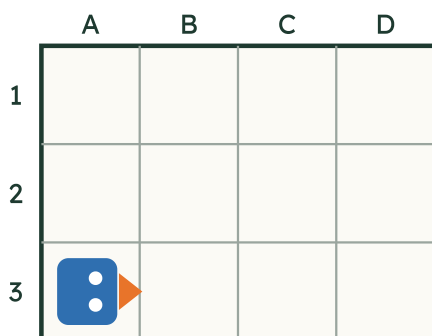
Robot 6



My program:

- 3 Predict** Follow the program with your finger. Which square does the robot stop on?

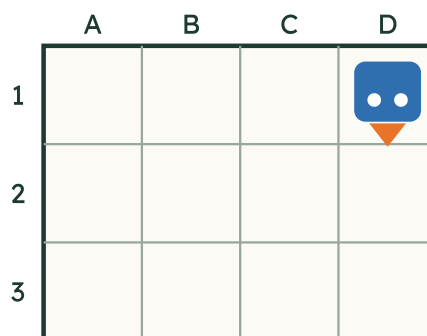
Program A



↑ ↑ ↺ ↑

Answer: _____

Program B



↑ ↺ ↑ ↑

Answer: _____

Answer Key

Guide the Robot

Question	Answers
1 Get to the flag	- e.g. ↑ ↑ (forward ×2). Any program that reaches the flag without bumping into a tree is correct. - e.g. ↑ ↑ (forward ×2). Any program that reaches the flag without bumping into a tree is correct. - e.g. ↑ ↑ ↻ ↑ ↑ (forward ×2, turn right, forward ×2). Any program that reaches the flag without bumping into a tree is correct. - e.g. ↑ ↑ ↻ ↑ ↑ (forward ×2, turn right, forward ×2). Any program that reaches the flag without bumping into a tree is correct.
2 Watch out for trees!	- e.g. ↑ ↻ ↑ ↻ ↑ ↑ ↻ ↑ (forward, turn left, forward, turn right, forward ×2, turn right, forward). Any program that reaches the flag without bumping into a tree is correct. - e.g. ↑ ↑ ↻ ↑ ↑ ↑ (forward ×2, turn right, forward ×3). Any program that reaches the flag without bumping into a tree is correct.
3 Predict	- square C2 - square B2

Teaching note: every grid answer was checked by a computer simulation. Columns are lettered and rows numbered so pupils can name a square, e.g. B2.