



1.6 Project: draw a letter

Driving · Robot club · about 20 min

Name _____

Class _____

Date _____

What this lesson is about

Plan a path, drive it, leave a trail.

- Plan first
- Stroke one
- Stroke two, two ways
- Your own letters

Questions

6 marks in all

1. The robot starts facing down the mat, at heading 180. What does `forward(60, distance=60)` draw? [1 mark]
☐ A A line down the mat
☐ B A line up the mat
☐ C A line to the right
☐ D Nothing, because forward means up the mat
2. The robot is facing down the mat. Which command slides it towards the right of the mat, without turning? [1 mark]
☐ A `left(60, distance=30)`
☐ B `right(60, distance=30)`
☐ C `turn_right(30, angle=90)`
☐ D `backward(60, distance=30)`
3. The robot faces down the mat at heading 180 and runs `turn_left(30, angle=90)`. What does `heading()` say? Give a whole number of degrees. [1 mark]
4. Put these lines in order to draw an L with a strafe, starting at the top left facing down. [1 mark]

Number the lines 1 to 5 to put them in the right order.

```
___ left(60, distance=30)
___ print("done at", position())
___ forward(60, distance=60)
___ connect()
___ from bugbot import *
```

5. Which way of drawing the second stroke keeps the corner of the L sharpest? [1 mark]
☐ A Strafing, because the robot does not turn
☐ B Turning, because the robot faces the way it goes
☐ C Both are exactly the same
☐ D Driving backwards

6. Which of these letters need `drive` with rotation to draw well?

[1 mark]

Tick every answer that is true.

☐ **A** T

☐ **B** S

☐ **C** E

☐ **D** O

☐ **E** H

The task: draw an L

Start at the top left facing down. Drive the long stroke into the corner zone, then the short stroke into the goal. The 60 by 30 L above finishes about 4 cm short of the goal, so measure the zones on the mat and plan your own lengths.

```
# the two lines every program starts with: the commands, then the robot
from bugbot import *
connect()

# stroke one, stroke two
```

Plan your program here, then type it in and press Run.



Do it on the robot

www.bugbotlab.com/learn/1-6-project-initials/

The simulator checks it and tells you when it passes. Nothing to install, no account.

Challenges

1. Draw your first initial. Take a screenshot of the trail.
2. Draw two letters, lifting the "pen" between them: drive to the start of the second letter in one move.
3. Write `stroke(cm)` and `corner(deg)` functions and draw an E with them.