



1.1 Your first move

Driving · Robot club · about 12 min

Name _____

Class _____

Date _____

What this lesson is about

Drive, wait, stop, the LED, and the safety rule.

- Drive, wait, stop
- The safety rule
- How BugBot moves
- Backwards

Questions

7 marks in all

1. In this program, what keeps the robot driving for two seconds?

[1 mark]

```
led("green")
forward(50)
wait(2)
stop()
led("off")
```

- ☐ A `wait(2)` , because `forward(50)` returns straight away
- ☐ B `forward(50)` , because it drives for two seconds
- ☐ C `led("green")`
- ☐ D `stop()`

2. What is the motion deadman?

[1 mark]

- ☐ A The robot stops itself if it hears nothing from the program for half a second
- ☐ B A button that switches the robot off
- ☐ C The robot stops when it touches a wall
- ☐ D A command you must call at the end of every program

3. On the real robot, a program is just `forward(50)` then `wait(2)` , with no `stop()` . About how many seconds after it starts do the motors switch off? Answer to one decimal place. [1 mark]

4. Which of these are true about how BugBot moves?

[1 mark]

Tick every answer that is true.

- ☐ A It has no wheels
- ☐ B Four small motors vibrate its feet
- ☐ C It can slide sideways without turning first
- ☐ D It drives perfectly straight
- ☐ E Every BugBot moves exactly the same

5. Two programs both wait 2 seconds. One uses `forward(20)` , the other `forward(90)` . What is different? [1 mark]

- ☐ A The `forward(90)` one goes much further
- ☐ B Nothing, they both drive for 2 seconds
- ☐ C The `forward(20)` one goes further
- ☐ D The `forward(90)` one drives for longer

6. Put these lines in order to drive forward for 1 second, then backward for 2 seconds, then stop. [1 mark]

Number the lines 1 to 7 to put them in the right order.

```
___ connect()  
___ backward(60)  
___ from bugbot import *  
___ wait(1)  
___ wait(2)  
___ stop()  
___ forward(60)
```

7. The robot drives forward 1.5 s and backward 1.5 s at the same speed, but the trail curves a little. What is the cause? [1 mark]

- ☐ A A vibration drive never goes perfectly straight
- ☐ B A bug in the program
- ☐ C The wait is too short
- ☐ D `backward()` is broken

The task: cross the line

Drive from the start into the green zone and stop inside it, using only `forward`, `wait` and `stop`. If it stops short, wait longer or go faster. The zone is big because on a real mat no two runs land in quite the same place.

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

# drive forward at 50 (keeps going until the next command)
forward(50)
# pause 2 s (the robot keeps doing what it was told)
wait(2)
# all motors off
stop()
```

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



Do it on the robot

www.bugbotlab.com/learn/1-1-your-first-move/

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

Challenges

1. Make the LED red while driving and green when stopped.
2. Drive forward for 1 s, backward for 1 s, three times over, and print `position()` at the end.
3. What is the slowest speed that still moves the robot? Try 10, 15, 20.