



F1.1 What a program is

Programming basics · GCSE · OCR J277 2.2.1, AQA 8525 3.2.2, Edexcel
1CP2 6.2.2 · about 10 min

What this lesson is about

Instructions, one at a time, top to bottom. Running code and reading what comes back.

- A program is a list of instructions
- The first two lines
- One at a time, top to bottom
- Instructions can change the world
- Running again
- What you know now

Questions

7 marks in all

1. In what order does Python carry out the lines of a program?

[1 mark]

- ☐ A Top to bottom, one at a time
- ☐ B Shortest line first
- ☐ C All at the same time
- ☐ D In any order it likes

Answer: A. The computer carries out the first instruction, then the second, then the third. It never skips ahead or goes back on its own.

2. What does this program print?

[1 mark]

```
print("start")
print("end")
print("middle")
```

Answer:

```
start
end
middle
```

The lines run in the order they are written, so the output follows the order of the lines, not the meaning of the words.

3. What does `from bugbot import *` do?

[1 mark]

- ☐ A Brings in the robot's commands, such as forward and stop
- ☐ B Connects to the robot
- ☐ C Makes the robot start moving
- ☐ D Prints the word bugbot

Answer: A. It brings in the commands. `connect()` is the line that finds the robot and opens the link to it.

4. A program prints "moving", then calls `forward(50)`, `wait(1)` and `stop()`, then prints "stopped". [1 mark]
When does "stopped" appear?
- ☐ A After the robot has stopped
 - ☐ B Before the robot moves
 - ☐ C At the same time as "moving"
 - ☐ D It never appears

Answer: A. One instruction at a time: the drive, the wait and the stop all happen before the last print.

5. You press Run a second time. Where does the program start? [1 mark]
- ☐ A From the first line again
 - ☐ B From where it stopped last time
 - ☐ C From the last line
 - ☐ D It remembers and skips the lines it already ran

Answer: A. A program does not remember what happened last time. Every run is a fresh start from the top.

6. Which of these instructions make the robot do something, rather than just print? [1 mark]

Tick every answer that is true.

- ☐ A `forward(50)`
- ☐ B `stop()`
- ☐ C `print("hello")`
- ☐ D `wait(1)`

Answer: A, B, D. print only talks. forward and stop act on the motors, and wait pauses the program while the robot carries on.

7. What is the difference between an algorithm and a program? [1 mark]
- ☐ A A program is an algorithm written in a language a computer can run
 - ☐ B They are two words for exactly the same thing
 - ☐ C An algorithm always runs faster
 - ☐ D A program is only for robots

Answer: A. An algorithm is the set of steps that solves a problem. Written in a programming language, it becomes a program.

The task: your first program

Make the robot print three lines. One of them must be exactly `I am a BugBot` . The robot should not drive.

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

print("...")
```

The hint students can ask for: Print three lines. One of them must be exactly: I am a BugBot

A solution

```
from bugbot import *
connect()
print('hello')
print('I am a BugBot')
print('bye')
```

Any program that meets the task's checks is marked correct in the simulator; this is one way, not the only way.