



F1.3 Calling functions

Programming basics · GCSE · OCR J277 2.2.3, AQA 8525 3.2.10, Edexcel

1CP2 6.6.1 · about 15 min

What this lesson is about

Arguments, telling and asking, and notes on the robot's buzzer.

- A name, then brackets
- Arguments you can hear
- No brackets, nothing happens
- Some functions need nothing, some need several things
- Some arguments have names
- Telling versus asking
- The robot's functions so far

Questions

8 marks in all

1. In `led("red")`, what is `"red"` called? [1 mark]
- ☐ A An argument
 - ☐ B A function
 - ☐ C A variable
 - ☐ D A comment

Answer: A. The information inside the brackets of a call is an argument. `led` is the function.

2. What happens when a program contains `stop` with no brackets? [1 mark]
- ☐ A Nothing: the function is named but not called, and there is no error
 - ☐ B The robot stops
 - ☐ C Python shows a `SyntaxError`
 - ☐ D The program ends

Answer: A. The brackets are what call a function. Without them nothing happens, and Python does not complain: one of the quiet mistakes.

3. Which of these functions ask the robot something and give back an answer? [1 mark]

Tick every answer that is true.

- ☐ A `battery()`
- ☐ B `distance()`
- ☐ C `led("red")`
- ☐ D `stop()`

Answer: A, B. `battery` and `distance` answer with a number. `led` and `stop` tell the robot to do something.

4. A program has the line `battery()` on its own. What does it show? [1 mark]
- ☐ A Nothing: the answer comes back and is thrown away
 - ☐ B The battery percentage
 - ☐ C An error
 - ☐ D The word battery
- Answer:** A. An asking function is only useful if you do something with its answer, such as print it: `print(battery())`.
5. In `forward(50, distance=20)`, what is `distance=20` called? (two words) [1 mark]
- Answer:** named argument. An argument given as name=value is a named (or keyword) argument. The name says which piece of information it is.
6. `led(255, 0, 0)` makes the LED red. What does `led(0, 0, 255)` make it? [1 mark]
- ☐ A Blue
 - ☐ B Red
 - ☐ C Green
 - ☐ D Off
- Answer:** A. The three arguments are red, green and blue, in that order, so the order of arguments matters.
7. `tone(440, 0.5)` plays a note. What does the `0.5` set? [1 mark]
- ☐ A How long the note lasts, in seconds
 - ☐ B How high the note is
 - ☐ C How loud the note is
 - ☐ D Which robot plays it
- Answer:** A. The first argument is the frequency in hertz, the second is the length in seconds. The order of the arguments matters.
8. `battery()` gives back a value and `led("red")` does not. In exam terms, which is a function and which is a procedure? [1 mark]
- ☐ A `battery()` is a function, `led("red")` is a procedure
 - ☐ B `battery()` is a procedure, `led("red")` is a function
 - ☐ C Both are procedures
 - ☐ D Both are variables
- Answer:** A. A function returns a value; a procedure carries out a task and returns nothing. Python calls both functions.

The task: lights and numbers

Make the LED blue, then print two lines: `battery: <number>` and `ahead: <number>`, using the robot's answers. The robot must not drive.

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

led("...")
print("battery:", ...)
```

The hint students can ask for: Set the LED first, then print the two sensor readings on their own lines, worded as the task shows. Nothing here needs the robot to move.

A solution

```
from bugbot import *
connect()
led('blue')
print('battery:', battery())
print('ahead:', distance())
```

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