WORKSHEET

F1.10 Project: ask and drive

BugBotLab

Programming basics · GCSE · about 25 min

Name _____ Class _____ Date _____

What this lesson is about

Plan, build and test one program that asks, drives a square, plays notes and reports.

- The brief
- Plan before you type
- Step 1: ask and convert
- Step 2: one side and one corner
- Step 3: the whole square
- Step 4: the report
- Testing

Questions

4 marks in all

1. In the project, which of these is an output? [1 mark]

- ☐ **A** The perimeter printed at the end
- ☐ **B** The side length the user types
- ☐ **C** The note the user types
- ☐ **D** The constant SPEED

2. What does this program print? [1 mark]

```
side = float("12.5")
print("perimeter:", 4 * side)
print("area:", side * side)
```

3. Why does the project convert the note with `int` but the side with `float`? [1 mark]

- ☐ **A** A side can be a fraction of a centimetre; a note is a whole number of hertz
- ☐ **B** int is faster
- ☐ **C** tone() only accepts text
- ☐ **D** float cannot be used twice

4. You test with a side of 10. What should the area be? [1 mark]

- ☐ **A** 100
- ☐ **B** 40
- ☐ **C** 20
- ☐ **D** 10

The task: ask and drive

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

SPEED = 50

# ask the two questions and convert the answers

# drive the square, a note at each corner

# print the perimeter and the area
```

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

Do it on the robot

www.bugbotlab.com/learn/f1-10-project-ask-and-drive/

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

Challenges

1. Ask for the speed as well, as a third input.
2. Make the robot play a different note at each corner: the note, then a note twice as high, then back.
3. Drive a rectangle instead: ask for the width and the length, and report its perimeter and area.