



F1.8 Data types and casting

Programming basics · GCSE · OCR J277 2.2.2, AQA 8525 3.2.1, Edexcel
1CP2 6.3.1 · about 15 min

Name _____

Class _____

Date _____

What this lesson is about

Integer, real, Boolean, character and string, and converting between them.

- Five types
- Casting: changing the type
- Why the type matters
- When casting fails

Questions

7 marks in all

1. Which data type best suits whether the robot has bumped into something? [1 mark]

- ☐ A Boolean
- ☐ B Integer
- ☐ C String
- ☐ D Real

2. Which data type best suits a distance measured to a tenth of a centimetre, such as 41.3? [1 mark]

- ☐ A Real
- ☐ B Integer
- ☐ C Boolean
- ☐ D Character

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

```
print(int("20") * 3)
print("20" * 3)
```

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

```
print(int(7.9))
```

5. What happens with `int("twenty")`? [1 mark]

- ☐ A A ValueError: there is no number in the text
- ☐ B It gives 20
- ☐ C It gives 0
- ☐ D It gives the string "twenty"

6. What is casting? [1 mark]
- ☐ A Converting a value from one data type to another
 - ☐ B Storing a value in a variable
 - ☐ C Printing a value
 - ☐ D Rounding a number
7. Which function turns "2.5" into the number 2.5? [1 mark]
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The task: drive what you type

Ask How far? , turn the answer into a number, and drive exactly that far forward. The task will answer 35 , so the robot should stop 35 cm up the mat. Your program must work for any distance: do not type 35 into it.

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

far = input("How far? ")
forward(50, distance=far)
```

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



Do it on the robot

www.bugbotlab.com/learn/f1-8-data-types-and-casting/

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

Challenges

1. Ask for a number of seconds and wait that long, with the LED on.
2. Ask for a distance in metres and drive that many metres, converting to centimetres.
3. Print `type(position())` . It is none of the five types above. Find out what it is.