



F12.1 Impacts of technology

Technology and society · GCSE · OCR J277 1.6.1, AQA 8525 3.8, Edexcel
1CP2 5.1.1 · about 15 min

What this lesson is about

Ethical, legal, cultural, environmental and privacy impacts, stakeholders, and weighing them up.

- The five kinds of impact
- Stakeholders
- Weighing it up

Questions

5 marks in all

1. A shop uses face recognition on every customer. Which impact is that mainly? [1 mark]

- ☐ A Privacy
- ☐ B Environmental
- ☐ C Copyright
- ☐ D Performance

Answer: A. It records data about identifiable people, which is a privacy and data protection issue.

2. What is a stakeholder? [1 mark]

- ☐ A Anyone affected by a system
- ☐ B Only the person who pays for it
- ☐ C The programmer
- ☐ D The government

Answer: A. Users, non-users, workers, owners and society can all be stakeholders.

3. Which is an environmental impact? [1 mark]

- ☐ A The rare metals needed to make the device
- ☐ B The password being weak
- ☐ C The software licence
- ☐ D The user interface

Answer: A. Materials, energy and waste are environmental.

4. An exam question says "discuss". What does a good answer include? [1 mark]

- ☐ A Both benefits and drawbacks, then a conclusion
- ☐ B Only the benefits
- ☐ C A list of definitions
- ☐ D Only your opinion

Answer: A. Discuss means weigh both sides and judge.

5. An effect scores +3 and two effects score -1 each. What is the total?

[1 mark]

Answer: 1. $3 - 1 - 1 = 1$.

The task: weigh up the robots

Each effect in `effects` has a score from -3 to 3. Print each as `<name>: <score>` with a `+` in front of positive scores (an f-string with `{score:+d}` does this). Then print `total: <n>`, and on the next line `verdict:` `worth it` if the total is above 0, `verdict: not worth it` if below 0, and `verdict: too close to call` if it is exactly 0.

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

effects = [
    ("students learn to code", 3),
    ("plastic and metal to make", -2),
    ("electricity to run", -1),
    ("fewer jobs in assembly", -1),
    ("reaches remote schools", 2),
    ("e-waste at end of life", -1),
]
```

The hint students can ask for: Print each effect with its sign, adding the scores into a running total. Then choose between three verdicts by testing whether the total is above, below or exactly zero.

A solution

```
from bugbot import *
connect()
effects = [
    ("students learn to code", 3),
    ("plastic and metal to make", -2),
    ("electricity to run", -1),
    ("fewer jobs in assembly", -1),
    ("reaches remote schools", 2),
    ("e-waste at end of life", -1),
]
total = 0
for name, score in effects:
    print(f"{name}: {score:+d}")
    total = total + score
print("total:", total)
if total > 0:
    print("verdict: worth it")
elif total < 0:
    print("verdict: not worth it")
else:
    print("verdict: too close to call")
```

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

