Grade 8 Computing

Unit 11 · A Project for Your Community

ANSWER KEY · FOR TEACHERS

Full marks 29

Give the marks for the points in the marking scheme; an answer in other words that says the same is right.

1 Key words

1. user
2. problem statement
3. success check
4. inclusive collaboration
5. driver
6. navigator
7. findings table
8. project log

Each carries 0.5 mark. **K · 4**

2 Label the diagram

1. Ask the people it is for
2. Decide what it must do
3. Present what changed, with credits
4. Test with real users

Each carries 0.5 mark. **K · 2**

3 Multiple choice

i. **c.** What did you do the last time you couldn't find a book? **U · 1**

It asks about a real time in the past, in the user's own words. The others invite a polite yes, lead to the answer the team wants, or ask the user to guess the future.

ii. **c.** A grandparent can find the date of the next vaccination camp on a phone, in under a minute, without help. **U · 1**

A success check is a test a user can pass or fail, with a clear result. "Looks nice" can't be tested, and "uses CSS" says nothing about whether it meets the need.

iii. **b.** That member is left out of the team's plans and decisions. **U · 1**

Inclusive collaboration means everyone can take part. Plan where every member can join: at school, in a shared notebook, or on something every member has.

iv. **b.** `True`, then `False` **A · 1**

`in` looks for exactly the same characters. "Phool" is in the title; "phool", with a small p, isn't. That is why version 2 makes both small with `.lower()` before comparing.

v. **b.** People in Ward 5 who can't get to the office miss notices about vaccination camps and meetings, because the notices are only on the board outside. **U · 1**

A problem statement says who has the problem, what they need and why, and names no solution. The first is a solution, and the third a requirement. The last tells nobody anything.

4 What does it print?

MARKING SCHEME **A · 3**

- ✓ `Karnali Blues`: "ar" is inside "karnali blues".
- ✓ `Seto Dharti`: "ar" is inside "dharti", so a match can be in the middle of a word.
- ✓ `2 found`, printed once, after the loop (no other title has "ar").

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5 Trace the program

ANSWER **A · 4**

d	late	fines
5	1	10
0	1	10
0	1	10
14	2	38
2	3	42

```
OUTPUT
3 books are late. Fines: Rs 42
```

MARKING SCHEME

- ✓ 5: `late` 1, `fines` 10 (5 × 2).
- ✓ The two 0s: nothing changes, 1 and 10.
- ✓ 14: 2 and 38; 2: 3 and 42.
- ✓ `3 books are late. Fines: Rs 42`, printed once, after the loop.

6 Find and fix the bug

MARKING SCHEME **A · 3**

- ✓ An IndexError: `i` is 5, and the lists only go from 0 to 4.
- ✓ Check `roll > len(names)` (and `roll < 1`) before using the lists, and print a message such as "There is no roll number 6 on the list."
- ✓ The rest of the program goes in the `else:`, indented, so it runs only for a roll number on the list.

7 Short answer

ANSWER **HA · 3**

It isn't fair: in a short term, Class A always gets the lab and the classes at the end of the list may never get it, term after term. The order of the names, not need, decides.
Fairer: carry on from where the last term stopped, so every class gets its turn in rotation; or start each term with the class that has waited longest; or let the teachers agree an order based on need. Any of these makes the order of the alphabet stop deciding.

MARKING SCHEME

- ✓ Not fair: in a short term, the classes early in the list always get the lab, and those at the end may never get it.
- ✓ The order of the names, not need, decides, term after term.
- ✓ A fairer algorithm: carry on from where the last term stopped (a rotation), or start with the class that has waited longest.

8 Write a program

ANSWER

```
marks = [72, 45, 88, 61, 31]
total = 0
passed = 0
for m in marks:
    total = total + m
    if m >= 35:
        passed = passed + 1
print("Class average:", total / len(marks))
print(passed, "of", len(marks), "passed.")
```


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```
OUTPUT
Class average: 59.4
4 of 5 passed.
```

A · 3

Each student finds their own mark from the teacher, not from the notice board.

MARKING SCHEME

- ✓ A loop over the marks that adds each one to a total.
- ✓ `if m >= 35:` counts the students who passed.
- ✓ Prints the average, total ÷ 5 = 59.4, and 4 of 5 passed, with no names.

9 Think

ANSWER

HA · 2

Sorted by name, Aarati always comes first and Yamuna always last, for every new book, for years. Nobody planned it, but the alphabet decides who reads first: the algorithm is biased. A fair rule is first come, first served: keep the names in the order the students asked, adding each new one at the end, and don't sort them.

MARKING SCHEME

- ✓ Students whose names come early in the alphabet always gain; those late in it always wait, for every book.
- ✓ Fair: first come, first served, in the order they asked (not sorted).

10 Activity: Interview a user

(not marked)

WHAT STUDENTS SHOULD FIND

Good questions are about what the person does now and about real times ("the last time you…"), in their own words; they don't mention an app, and don't lead to the answer the team wants. Students often find that the need is different from what they expected, and that the best solution may not even need a computer. The last column should lead to a problem statement: who, what they need, and why it matters.

Marks by level	Knowledge	Understanding	Application	Higher ability	**Total**
Marks	6	4	14	5	**29**

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