5 Bias, privacy, and safe computing – Part 2

Name: _____ Class: _____ Date: _____

Recall

In Part A you met the effects of computing. Now fairness and keeping data safe:

- Programs can be unfair if they learn from unfair data.
- Your personal information needs protecting.
- Messages can be scrambled so only the right person can read them.

Each idea has a worked example before the Practice.

New ideas

1 Computing bias

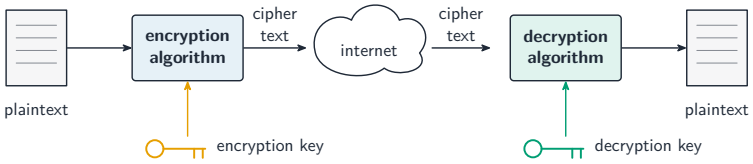
A program can carry **bias** if the data it learns from does not represent everyone fairly – leading to unfair results for some groups. The bias comes from the data and design, not the machine "deciding" to be unfair.

2 Privacy

Programs that collect data raise **privacy** concerns. Good practice: collect only what is needed, protect it, and be honest about how it is used.

3 Encryption

Encryption scrambles data so that only someone with the right key can read it – keeping messages and passwords safe as they travel over the internet.



4 Safe computing

Protect yourself with strong, unique passwords, caution with unknown links and downloads, and keeping software up to date.

Watch out: computing bias usually comes from **biased data**, not a machine choosing to be unfair. If a program is trained on data that under-represents some people, it can treat them unfairly – so the fix is better data and design.

Practice

Try these in order. The methods are all above.

2.1 State where computing bias usually comes from. [2]

2.2 State two good practices for handling people's personal data. [2]

2.3 State what encryption does. [2]

2.4 Give two ways to stay safe online. [2]

2.5 Explain why a program trained on unfair data can give unfair results. [2]