GCSE Computer Science Algorithms Practice

Level: GCSE **Subject:** Computer Science

Practice tasks for algorithms, pseudocode and computational thinking.

Key Ideas

- Sequence: instructions run in order.
- Selection: decisions using IF statements.
- Iteration: repeated instructions using loops.
- Variables: named storage locations for data.
- Trace table: used to follow an algorithm step by step.

Practice Questions

- Write pseudocode to input a number and output double the number.
- Write pseudocode that prints numbers from 1 to 10.
- Explain the purpose of a trace table.
- Identify one advantage of using subroutines.

Challenge

Write an algorithm that asks for 5 test scores, calculates the total and outputs the average.

Answer Guidance

Use this section for self-marking or tutor-led feedback. Award partial credit for correct method, clear reasoning and accurate use of terminology.

Answer Guidance

1. INPUT number; OUTPUT number * 2
2. FOR i = 1 TO 10; OUTPUT i; NEXT i
3. A trace table records variable values as an algorithm runs.
4. Subroutines reduce repetition and make code easier to test.
5. Use loop, total variable and average = total / 5.