

Topic 2: Nested Loops and Combining Concepts

Chapter 3: Programming with Variables and Loops (Advanced) · Topic 2

Key Concept

A nested loop runs an inner loop completely for each single repetition of an outer loop, creating more complex repeated patterns.

For example, to draw a grid of dots, an outer loop might control rows while an inner loop controls dots in each row.

Combining loops with variables and conditionals lets us create more sophisticated programs, like games with scoring and levels.

Understanding how to combine these programming concepts helps us build increasingly complex and interesting programs.

Quick Revision Notes

- A nested loop is a loop inside another loop.
- The inner loop runs fully for each outer loop repetition.
- Example: rows (outer loop), dots per row (inner loop).
- This creates complex repeated patterns.
- Combining loops with variables enables complex programs.
- This can include games with scoring and levels.
- Combining concepts builds sophisticated programs.
- This is an important programming skill.

Practice Questions

- 1 Plan a nested loop to draw a 3x3 grid pattern.
- 2 Discuss how an inner loop relates to an outer loop.
- 3 Combine a loop and a variable in a simple plan.
- 4 Discuss a game feature that might use nested loops.
- 5 Create a flowchart showing a nested loop.
- 6 Explain nested loops in your own words.