Substituting values into expressions

MODULE 10 · ALGEBRA — PATTERNS, EXPRESSIONS AND EQUATIONS ALGEBRA

HOW TO ANSWER TODAY

- **Letter expressions.** A letter stands for a number. Swap the letter for its value, then work out the answer.
  If n = 3, then 2n + 5 = 2 × 3 + 5 = 11

STRETCH PROBLEMS

1. Saoirse is setting up a sleepover and lays out biscuits on plates for her friends. Each plate gets **3** biscuits for every guest except herself, plus **4** extra biscuits on a sharing plate in the middle. If n = **5** is the total number of friends at the sleepover, how many biscuits are there in total when you work out **3** (n - **1**) + **4**?

   If n = 5, what is the value of 3(n - 1) + 4?

2. On the 5th class school-bag rota, each pupil carries **3** books plus **5** spare copybooks for the group. If n stands for the number of books per pupil and n = **9**, work out 3n + **5** to find the total number of items in one pupil's bag.

   If n = 9, what is the value of 3n + 5?

3. On the sponsored cycle around the school cycle path, Tadhg cycles 2n + **7** laps, where n is the number of laps his younger sister completes. If n = **5**, how many laps does Tadhg cycle?

   If n = 5, what is the value of 2n + 7?

4. On the sponsored cycle, Tadhg plans to do **3** laps of the cycle path at n kilometres per lap, but he stops **1 kilometre** short on his final lap. The total distance he cycles is 3n − **1 kilometres**. If n = **7**, how many kilometres does Tadhg cycle?

   If n = 7, what is the value of 3n - 1?