

Writing expressions from word situations

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 $2n + 5 = 2 \times 3 + 5 = 11$

- **Function machine.** Do EACH step of the rule in order to the input.

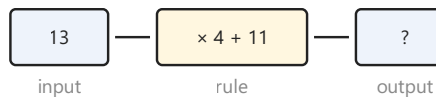
Rule $\times 4 + 2$, input $5 \rightarrow 5 \times 4 = 20, + 2 = 22$

★ 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 $3(n - 1) + 4$?

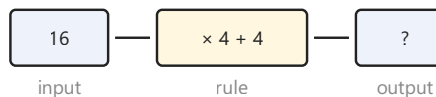
If $n = 5$, what is the value of $3(n - 1) + 4$?

2



On the 5th class nature walk through the local park, Oisín spots a rule on a worksheet from his teacher: multiply the number of trees in each row by 4, then add 11 birds resting nearby. If one row has 13 trees, what number does the rule give?

3



At break time, Tadhg shares biscuits using a rule: multiply the number of pupils by 4, then add 4 extra biscuits for the teachers. If 16 pupils are in the group today, how many biscuits does he need in total?

- 4 5th class are planting seedling trays in the school polytunnel. Each row holds $3(n - 1) + 4$ seedlings, where n is the number of pupils planting in that row. If $n = 7$, what is the value of $3(n - 1) + 4$?

- 5 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 $3n - 1$?