

Algebra problem-solving and end-of-year review

MODULE 10 · ALGEBRA — PATTERNS, EXPRESSIONS AND EQUATIONS ALGEBRA

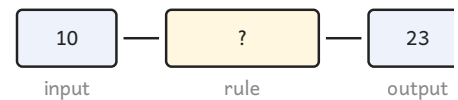
HOW TO ANSWER TODAY

- **Find the rule.** Look at how each input changes to its output. Try $\times$ first, then $+$ or $-$.
 $3 \rightarrow 6, 5 \rightarrow 10, 7 \rightarrow 14 \rightarrow$ rule is $\times 2$

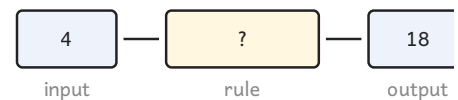
 STRETCH PROBLEMS

- 1 Oisín brings a bag of bread to the pond in Wicklow to feed the ducks. After feeding them for **1 minute** he has **14** pieces left, after **2 minutes** he has **9** pieces, after **3 minutes** he has **4** pieces, and after **4 minutes** he has **- 1** pieces (he had to borrow one from his sister). Following the same pattern, how many pieces will he have after **5 minutes** ?

- 2 Ms Murphy is decorating the 5th class room for World Book Day. For every shelf she fills with books, she pins up a fixed number of bunting flags around the room. She notices a pattern between books used and total decorations: $10 \rightarrow 23$, $6 \rightarrow 19$, $3 \rightarrow 16$. What is the rule?



- 3** At break time in 5th class, Niamh shares out biscuits from a packet. For every group that comes to her table, she gives them **14** more biscuits than the number of children in the group. When **4** children come, she gives **18** biscuits; when **2** come, she gives **16**; when **9** come, she gives **23**. What is the rule she is using?



- 4 At Camogie training under the floodlights, Aoife counts the cones laid out for each drill of the night. The first four drills use 19, 25, 31 and 37 cones, with the same number added each time. How many cones will be laid out for the fifth drill?

- 5 Mr Ó Briain pins up the weekly star chart on the 5th class noticeboard. The total stars after each week so far are 5, 17, 29 and 41. If the pattern continues, how many stars will be on the chart after the next week?