

Generalising number patterns and sequences

MODULE 10 · ALGEBRA — PATTERNS, EXPRESSIONS AND EQUATIONS

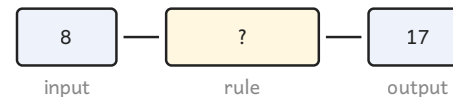
ALGEBRA

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 In the photocopier room, Aoife is stacking leftover worksheets for 6th class. She counts the sheets left after each run as **32**, **29**, **26**, then **23**. What comes next in the sequence?
- 2 Aoife is recording the scores from a team game at the school athletics sports day. The scores after each round form the sequence **5**, **-4**, **-13**, **-22**. What comes next in the sequence?
- 3 At break time, 6th class share biscuits from a big packet. The number left each day follows the pattern **29**, **26**, **23**, **20**. What comes next in the sequence?
- 4 Fionn is helping granny count the calves on the farm. He notices that **8** calves map to a tally of **17**, **4** calves map to **9**, and **1** calf maps to **3**. Find the rule that maps each input to its output.
- 5 Saoirse plays a number-line game in maths. Starting at **7**, she jumps the same distance each time and lands on **7**, **0**, **-7** and **-14**. What number comes next?



INVESTIGATE

Growing patterns

Build a pattern that grows (with counters, matchsticks or drawings). Record how many you need for the 1st, 2nd, 3rd... shape in a table. Find a rule that predicts the **10th** shape without building it.

Shape	Counters/Matchsticks/Drawings
1st	
2nd	
3rd	
4th	
5th	
6th	
7th	
8th	
9th	
10th	