

Growing and shrinking patterns; predict the next terms

WHAT THIS LESSON TEACHES

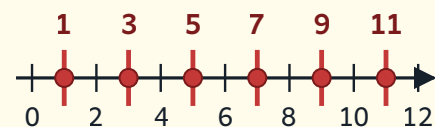
Each number in a pattern is a term – the number we land on, not the jump. A growing pattern gets bigger each time; a shrinking pattern gets smaller. The step is how much you add or take away to reach the next term.

- In 1, 3, 5, 7 the terms are 1, 3, 5, 7 and the step is +2 each time.
- In 20, 16, 12, 8 the pattern shrinks by taking away 4 each time.

MODEL THIS ON THE BOARD

STEADY +2 GROWING PATTERN

- 1 The terms already marked are 1, 3, 5, 7.
- 2 Each jump is the same: $3 - 1 = 2$, $5 - 3 = 2$, $7 - 5 = 2$, so the step is +2.
- 3 Add the same step twice more: $7 + 2 = 9$, then $9 + 2 = 11$.



DISCUSSION STARTER

REFLECT Was it easier to spot equal jumps or jumps that change each time? What helped?

ANSWER KEY

a) 17, 19, 21, 23, 25, 27

c) 20, 16, 12, 8, 4, 0

Q1: step +5; 33, 38

Q2: 15, 21

a) Sometimes — True for equal-step patterns like 2, 4, 6, 8; false for 1, 3, 6, 10.

b) Always — The rule tells you exactly how to get from one term to the next.

c) Never — Shrinking patterns go down, e.g. 20, 16, 12, 8.

d) Always — The rule is add 5 each time, so $20 + 5 = 25$.

EXTENSION SHEET · STRETCH ANSWERS

S1: 53

S2: 56

S3: 63

S4: 75

S5: 66

Investigation: Invent a pattern — open-ended; scan pupils' working for valid solution paths rather than a single answer.