

Number patterns and sequences – find the rule

WHAT THIS LESSON TEACHES

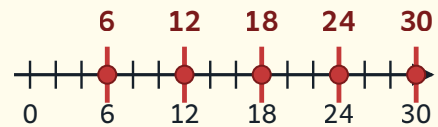
A sequence is a list of numbers that follow each other in a set order. To find the rule, look at how the numbers change from one step to the next, then do the same thing every time.

- In 5, 10, 15, 20 the rule is add 5.
- In 2, 4, 8, 16 the rule is double each time.

MODEL THIS ON THE BOARD

FIND THE RULE

- 1 Look at the jumps on the number line: from 6 to 12 is add 6.
- 2 Check the next jumps: 12 to 18 and 18 to 24 are also add 6 each time.
- 3 The rule is the same every step, so add 6 again: $24 + 6 = 30$.



DISCUSSION STARTER

REFLECT How do you check that the rule you found really works for every term?

ANSWER KEY

- b) add 5
- c) 25
- Q1: add 3
- Q2: add 3
- Q3: take away 5
- Q4: double each time
- 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: 11

S2: -23

S3: -6

S4: -16

S5: 1

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