

Growing patterns – predict the next ones

WHAT THIS LESSON TEACHES

A growing pattern adds the same number of pieces at every new stage. Once you know the step you can predict the next counts by adding that step each time.

- 1, 3, 5, 7 grows by adding 2 squares each stage
- If stage 3 has 6 and the step is 2 then stage 4 has 8

MODEL THIS ON THE BOARD

NEXT STAGE ON THE STAIRCASE

- 1 The counts so far are 1, 3, 5.
- 2 Each stage adds 2 more squares than the one before.
- 3 Add the step: $5 + 2 = 7$.
- 4 So the next stage must have 7 squares.

DISCUSSION STARTER

REFLECT How did counting the extra pieces each time help you predict the next shape?

ANSWER KEY

Scaffold: visual check on the page

Q1: 17

Q2: 12

Q3: 8

a) Always — That equal step is the rule that makes the pattern grow steadily.

b) Sometimes — It depends on the starting number and the size of the step.

c) Always — You simply add the step to the last count you already know.

d) Never — Patterns can start at any number as long as the step stays the same.

EXTENSION SHEET · STRETCH ANSWERS

S1: 43

Investigation: What does the 10th look like? — open-ended; scan pupils' working for valid solution paths rather than a single answer.