

Patterns and rules investigation

WHAT THIS LESSON TEACHES

A growing pattern adds the same amount at every stage. The rule is the fixed jump size from one stage to the next.

→ Chairs around tables: 4, 8, 12 - the rule is add 4 each time.

→ Grow by 3: 3, 6, 9, 12 - next stage is 15.

MODEL THIS ON THE BOARD

PREDICT THE NEXT STAGE

- ① Look at the stages 1, 4, 7
- ② Jump from 1 to 4 is 3
- ③ Jump from 4 to 7 is 3
- ④ Rule is add 3 each time
- ⑤ Next stage is $7 + 3$ which is 10

ANSWER KEY

Scaffold: visual check on the page

Q1: 28

Q2: 31

Q3: 5

Q4: 23

Q5: 18

Q6: add 4

a) **Always** — That fixed jump is exactly what makes the pattern a growing pattern with a rule.

b) **Never** — The jump is 3 so the next number is 12, not 15.

c) **Sometimes** — Starting from an even number keeps them even, but starting from an odd number keeps them odd.

d) **Always** — The fixed jump lets you keep adding to reach any later stage.

EXTENSION SHEET · STRETCH ANSWERS

Investigation: Seats around the tables — open-ended; scan pupils' working for valid solution paths rather than a single answer.