Lesson 108

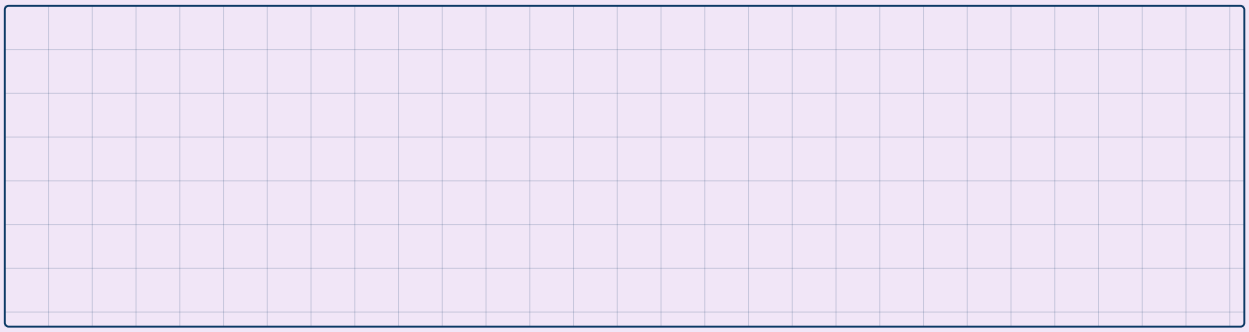
Growing patterns – predict the next ones

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.

WARM-UP

Use the squared grid to draw and continue the growing patterns.



1. Draw the three stages that use 2, 4 and 6 squares
2. Add the next stage that must use 8 squares
3. Beside it draw the stages 1, 3, 5 and the next stage with 7 squares

PRACTICE

1. Sam builds block towers that use **11** blocks, then **13**, then **15**. How many blocks will the next tower need?

2. Lia makes flat patterns with **3** pieces, then **6**, then **9**. What number of pieces comes next?

3. A building pattern grows by **2** pieces each time and stage **3** already has **6** pieces. How many pieces will stage **4** have?

ALWAYS, SOMETIMES, NEVER

Always, sometimes or never true? Write A, S or N.

a. In a growing pattern the same step is added at every stage ☐

b. The next number in a growing pattern is always even ☐

c. Knowing the step lets you predict the next stage without drawing ☐

d. Every growing pattern must begin with 1 ☐

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

ALGEBRA