

Pattern detectives: module review

CURRICULUM ALIGNMENT

ALG.PRR.2

identify and express relationships in patterns, including growing or shrinking shape patterns and number sequences.

INTERACTIVES

Pattern Blocks · display

Hundred Square · display, explore

Spin the Wheel (Maths) · explore

WHAT THIS LESSON TEACHES

A pattern follows a little chunk again and again. Find the chunk and you can keep going: some patterns repeat a chunk, some grow by the same amount each step, and some skip-count by jumping on the numbers.

→ Triangle, square, triangle, square: the chunk is triangle then square.

→ 5, 10, 15, 20: the rule is count in fives.

MODEL THIS ON THE BOARD

SPOT THE SKIP-COUNT RULE

- 1 Look at the board model 5, 10, 15, 20, 25.
- 2 Each jump adds the same amount: **5**.
- 3 So the rule is skip-count in fives.
- 4 The next number after 25 is **30**.

LESSON ARC

Open with three mystery pattern strips — one repeating, one growing, one skip-count — and take hands-up guesses naming the type and the clue. On the IWB, walk each type: ring the chunk on a repeating strip, count the step-up on a growing staircase of towers, then chant a fives skip on the hundred square. Sort all three under repeats / grows / skips. Pupils shade three skip-count runs together, write one five-term skip line in copybook, then run brisk Class Challenge type-and-wheel jobs at the board.

TEACHING MOVES

1. **Getting Started.** Hold up three paper strips (or sketch three short sequences) without naming the type. Take three hands-up answers only — type plus the clue that made them sure. Cap at four minutes; don't correct yet, just harvest the language.
2. **Watch and Notice.** Work the three interactives in order. On the repeating strip, invite the class to ring the chunk before you name it. On the growing staircase (2, 4, 6), ask 'how much taller each time?' before revealing 8 — stress you are watching the shape grow, not only reading numbers. On the hundred square, point at 5, 10, 15, 20, chant together, then contrast aloud: growing builds taller towers; skip-count jumps on the grid. Write the three headings and place each example with the class.
3. **Try It Together.** Call the three starts in order: twos from 8, fives from 25, tens from 40. Have the class chant the skip before each shade lands. Invite a few pupils across the three jobs; the class agrees or corrects out loud. Watch for anyone shading every next number instead of jumping by the skip size.
4. **Write a skip-count line.** Leave the model 5, 10, 15, 20, 25 visible. Give each row a start (twos from 4, fives from 10, or tens from 20). Pupils write exactly five numbers. Walk the rows glancing for a steady jump size and no missing terms — whole-class copybook practice, not marking.

5. **Class Challenge.** Keep board work brisk. Type jobs first: flash one strip at a time and ask 'does it repeat, grow, or skip — and what is the rule?' before each reveal. Then spin the wheel; supply a fitting start (2s from 6 or 14; 5s from 20 or 25; 10s from 30 or 40) and ask for the rule plus the next three numbers. Several quick rounds, class confirms, move on.
6. **What Did We Notice?.** Ask: 'What is a pattern detective's first question when a brand-new pattern appears?' Listen for answers that name the rule, the chunk, or the jump size. Re-voice a strong one: 'so the first job is to find the rule before you continue it.' Head off bare guesses that jump straight to the next number.

COMMON MISCONCEPTIONS

⚠ Pupils shade every next number on the hundred square (8, 9, 10, 11...) instead of jumping by the skip size.

Stop and chant the jump aloud before the next shade lands — 'plus two, plus two'. Point back at the already-shaded 5, 10, 15, 20 and ask 'what size is the jump between each?'

⚠ Pupils call a growing staircase a repeating pattern because the same shape appears in every tower. Put the repeating strip beside the staircase. Ask: 'is the same chunk looping, or is something getting taller each time?' Count the extra blocks on each step so the growth is visible.

⚠ Pupils jump straight to naming the next term without first naming the rule — 'it goes 8 next' with no type or jump size stated.

Hold the reveal and ask the detective's first question: 'does it repeat, grow, or skip — and what is the rule?' Only after the rule is said aloud do you let the next term land.

DIFFERENTIATION

EMERGING

- On the copybook skip-count line, stay with tens only and pre-write the first two terms so the pupil only adds the last three jumps.
- During Class Challenge type jobs, offer a forced choice — 'is this one repeating or growing?' — before asking for the rule.

DEVELOPING

- After the five-term copybook line, ask the pupil to name the tenth term without writing every step — justify from the jump size alone.
- On a wheel job, swap the start mid-round (e.g. fives from 25, then from 17) and ask whether the rule changed.

PROFICIENT

- During Class Challenge, give a mixed strip that could be misread two ways and ask which heading it belongs under — and what clue decides it.
- Pose: write a growing pattern of towers that grows by 3 each step, starting at 2 — five terms in copybook, then say the tenth tower's height without drawing it.

✂ **Cross-curricular:** Tie to PE warm-ups — clap-stamp repeating chunks, then skip-count the class's star jumps in 2s and 5s.

ANSWER KEY

Scaffold: visual check on the page

Q1: 14, 16, 18

Q2: book, pencil

Q3: 40, 45, 50

a) Always : That is the definition of a repeating pattern.

b) Always : Equal growth each time is what makes a growing pattern.

c) Never : The line 5, 10, 15, 20 mixes odd and even numbers.

d) Sometimes : True for 5, 10, 15, 20; false for 2, 3, 5, 8, where the jumps change.

EXTENSION SHEET · STRETCH ANSWERS

S1: circle, circle, star

S2: 15

S3: 60, 50, 40

S4: any equal jumps from 4, such as 4, 6, 8, 10, 12 (skip-count in twos)