Cobra Scale Patterns: Diamond vs Overlapping Rows

Original tasks 1, 2, 3 / complete keys

Task 1

Draw a diamond pattern panel 8 cm wide with 4 scales across one row. Use a constant x-height of 1 cm. Describe the offset of the second row.

Answer: The average spacing is 8 cm divided by 4 scales, which equals 2 cm per scale. The second row is offset by half a spacing, or 1 cm, so its scales sit between the gaps of the first row.

Reason: Diamond patterns use staggered rows. Half-spacing offset creates diamond-shaped gaps between scales.

Check: Measure the panel width, count scales across one row, and divide. Confirm the second row starts 1 cm to the side of the first row's first scale.

Task 2

Draw an overlapping row pattern panel 12 cm wide with 6 scales across one row. Choose a consistent overlap depth of 0.5 cm. Explain how you check consistency.

Answer: Average spacing is 12 cm divided by 6 scales, which equals 2 cm per scale. Check consistency by comparing the lower edge of each row to the row below; the overlap should be 0.5 cm each time.

Reason: Overlapping rows require a repeated overlap depth. Measuring the same depth between rows confirms consistency.

Check: Use a ruler to measure the overlap at three different points along the row. All measurements should be close to 0.5 cm.

Task 3

A student draws a diamond pattern with 5 scales across a 10 cm panel, then draws a second row offset by 2 cm. Is the offset correct for a diamond pattern? Explain using arithmetic.

Answer: No. Average spacing is 10 cm divided by 5 scales, which equals 2 cm per scale. A diamond pattern needs a half-spacing offset, which is 1 cm, not 2 cm. The 2 cm offset is a full spacing and would align scales directly above each other.

Reason: Half-spacing offset creates the staggered diamond gaps. Full-spacing offset removes the stagger.

Check: Divide panel width by scale count to find spacing, then divide by 2 to find the correct offset. Compare to the student's offset.

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Original tasks 4 / complete keys

Task 4

Compare two panels: Panel A is a diamond pattern 9 cm wide with 3 scales across one row; Panel B is an overlapping row pattern 9 cm wide with 3 scales across one row. Both use a 1.5 cm x-height. Which panel has more visible gaps, and why?

Answer: Panel A has more visible gaps because diamond patterns create diamond-shaped spaces between staggered scales. Panel B has overlapping rows, so each row partly covers the row below, reducing visible gaps. Both have the same average spacing: 9 cm divided by 3 scales equals 3 cm per scale.

Reason: The pattern convention changes gap visibility even when spacing and x-height match.

Check: Confirm both panels have the same width, scale count, and x-height. Then inspect gap shapes: diamond gaps in Panel A, overlap edges in Panel B.

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Source rubric / reflection

- [ ] Pattern convention is clearly identified as diamond or overlapping rows.
- [ ] X-height is measured from baseline to midline and kept consistent or deliberately varied.
- [ ] Diamond rows are offset by half a spacing; overlapping rows have consistent overlap depth.
- [ ] Spacing is checked with simple arithmetic using measured panel width and scale count.
- [ ] Labels are readable; letter styles may vary but remain consistent enough to follow.
- [ ] Valid alternative conventions are accepted if the pattern logic is explained.

Reflection: What did you check, what did you change, and what will you try next?