How to Draw Chinese Dragon Scales with Overlapping Rows

Original tasks 1, 2, 3 / complete keys

Task 1

A panel is 10 cm wide. You choose a scale width of 2.5 cm. How many full scales fit in row 1, and where does row 2 start?

Answer: Four full scales fit in row 1. Row 2 starts 1.25 cm from the left edge, halfway between the first two marks.

Reason: Divide panel width by scale width: 10 divided by 2.5 equals 4. Half of 2.5 is 1.25, so the offset for row 2 is 1.25 cm.

Check: Multiply the number of scales by the scale width to confirm the total width, and verify the offset is half the scale width.

Task 2

You draw row 1 with scales 3 cm wide and 2 cm tall. You want row 2 to overlap the row below by one-third of the lower scale height. How much vertical overlap should row 2 have?

Answer: Row 2 should overlap by about 0.67 cm, which is one-third of 2 cm.

Reason: One-third of 2 cm is 2 divided by 3, approximately 0.67 cm. This is the vertical distance by which row 2 covers row 1.

Check: Measure the overlap on the drawing and compare it to one-third of the row-1 scale height.

Task 3

A student draws row 1 with five scales across a 15 cm panel. They then draw row 2 starting at the left edge instead of offsetting it. What problem will this cause, and how can they fix it?

Answer: Row 2 will sit directly above row 1 instead of overlapping the gaps, so the shingled effect is lost. Fix by shifting row 2 to start halfway between the first two marks of row 1.

Reason: Overlapping rows require an offset of half a scale width so new scales cover the junctions between lower scales. Starting at the edge aligns scales vertically and removes the overlap pattern.

Check: Trace a vertical line and check that it crosses one scale per row in a zigzag pattern rather than a straight stack.

How to Draw Chinese Dragon Scales with Overlapping Rows

Original tasks 4 / complete keys

Task 4

You have drawn three rows. A vertical line through the panel crosses row 1 at a scale center, row 2 at a junction between two scales, and row 3 at a scale center. Is the offset consistent? Explain.

Answer: Yes, the offset is consistent. Row 2 is shifted by half a scale width relative to row 1, and row 3 is shifted by half a scale width relative to row 2, returning it to the same alignment as row 1.

Reason: Each row is offset by half a scale width from the row below. After two offsets, the alignment repeats every two rows, so row 3 aligns with row 1.

Check: Compare the horizontal position of scale centers in row 1 and row 3; they should match within about 1 mm.

How to Draw Chinese Dragon Scales with Overlapping Rows

Source rubric / reflection

- [ ] Rows are offset by approximately half a scale width.
- [ ] Each new row overlaps the row below by a consistent amount.
- [ ] Scale sizes are similar within each row and across rows.
- [ ] Adjacent scales in the same row touch without large gaps.
- [ ] Overlap direction is consistent throughout the panel.
- [ ] Guide marks are erased and final outlines are clear.

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