How to Draw Avian Leg Scales: A Tile-by-Tile Guide

Original tasks 1, 2, 3, 4 / complete keys

Task 1

A 12 cm leg drawing has an ankle at 7 cm from the top. The shank rows are each 4 mm tall (row height is set independently of tile width). How many full shank rows fit above the ankle?

Answer: 7 cm = 70 mm; 70 ÷ 4 = 17.5, so 17 full rows fit above the ankle.

Reason: Convert the ankle height to millimetres, then divide by the stated row height. Round down to full rows.

Check: Multiply 17 rows × 4 mm = 68 mm, which is less than 70 mm; 18 rows would be 72 mm, too tall.

Task 2

On a 9 cm toe, you draw 3 rows that are each 2 mm tall. What total length do the rows cover?

Answer: 3 × 2 mm = 6 mm, covering 6 mm of the toe length.

Reason: Multiply the number of rows by the row height, keeping both in the same unit (mm).

Check: 6 mm is less than 90 mm (9 cm), so the rows fit; add rows until the toe is covered.

Task 3

A shank tile is 5 mm wide and a toe tile is 2.5 mm wide. What is the ratio of shank to toe tile width?

Answer: 5 ÷ 2.5 = 2, so the ratio is 2:1.

Reason: Divide the larger width by the smaller width to find the ratio.

Check: 2.5 mm × 2 = 5 mm, confirming the ratio.

Task 4

You need to transition from 6 mm ankle tiles to 3 mm foot tiles over two rows. What widths should the two transition rows use?

Answer: Row 1: 4.5 mm; Row 2: 3 mm. (Halve the difference: 6 → 4.5 → 3.)

Reason: Subtract the final width from the starting width (6 − 3 = 3 mm), divide by two steps (1.5 mm per step), and subtract each step.

Check: 4.5 mm is halfway between 6 mm and 3 mm; the second row matches the foot tile width.

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Source rubric / reflection

- [ ] Tiles are closed shapes with visible seams, not continuous bands.
- [ ] Tile size follows the scale-size guide: shank tiles larger than toe tiles.
- [ ] At least one bridging tile appears at the ankle or a toe joint.
- [ ] Shading uses a consistent light direction with highlight upper left and shadow lower right.
- [ ] Row guides are erased or faint, and the leg outline remains clear.
- [ ] Valid alternatives: rounded rectangles, pentagons, or hexagons are all acceptable if consistent.

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