Mermaid Scale Nail Art: Row-by-Row Practice for Pointed Scales

Original tasks 1, 2, 3 / complete keys

Task 1

A nail template is 15 mm long with row spacing 3 mm. How many full rows fit?

Answer: 4 full scale rows fit, using the stated 15 mm usable span and the lesson's default 5 mm scale height.

Reason: A full row needs the whole 5 mm scale height, then each additional row start advances 3 mm. Four rows have starts 0, 3, 6, and 9 mm; their tips are at 5, 8, 11, and 14 mm. A fifth row would start at 12 mm and end at 17 mm, beyond the 15 mm span. The calculation 15/3 = 5 counts spacing intervals, not five complete scales.

Check: Check 5 + (4 - 1) x 3 = 14 mm <= 15 mm, while 5 + (5 - 1) x 3 = 17 mm > 15 mm. One millimeter remains above the last complete scale point.

Task 2

A row is 12 mm wide and each scale is 4 mm wide with 0.5 mm gaps. How many full scales fit, and how much space is left?

Answer: 2 full scales fit, with 3.5 mm of space left.

Reason: Two scales plus one gap use 4 + 0.5 + 4 = 8.5 mm. A third scale would need another 0.5 mm gap plus 4 mm, totaling 8.5 + 0.5 + 4 = 13 mm, which exceeds 12 mm. So only two scales fit, and 12 - 8.5 = 3.5 mm remains.

Check: Add the widths and the single gap between two scales: 4 + 0.5 + 4 = 8.5 mm, which is less than 12 mm. Adding a third scale and its gap gives 8.5 + 0.5 + 4 = 13 mm, which is more than 12 mm, confirming only two scales fit.

Task 3

Row 1 has scales centered at 3 mm, 7 mm, and 11 mm. Where should the first scale of row 2 start if the offset is half a 4 mm scale?

Answer: At 5 mm.

Reason: Half of 4 mm is 2 mm; adding 2 mm to the first center at 3 mm gives 5 mm.

Check: The 5 mm center sits halfway between 3 mm and 7 mm, confirming the half-offset.

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Original tasks 4 / complete keys

Task 4

A scale is 5 mm tall and overlaps the scale below by 1 mm. If row 1 starts at 0 mm, where does row 2 start?

Answer: Row 2 starts at 4 mm.

Reason: The next row begins 5 mm minus 1 mm overlap above the previous start, so 0 + 4 = 4 mm.

Check: Row 1 top is at 5 mm; row 2 start at 4 mm leaves a 1 mm overlap, matching the plan.

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Source rubric / reflection

- [ ] Row spacing is even within 1 mm.
- [ ] Every second row is offset by about half a scale width.
- [ ] Scale points are centered and not rounded.
- [ ] Gaps between scales in a row are consistent.
- [ ] Highlight follows the upper curve and leaves the V clear.
- [ ] Valid alternative scale styles are accepted if the pointed-oval convention is followed.

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