Drawing Snake Scales on a Head: Wrapping Rows Around Curvature

Original tasks 1, 2, 3 / complete keys

Task 1

A crown midline measures 40 mm. You choose a 8 mm interval. How many crown rows should you plan, and what arithmetic check confirms the spacing?

Answer: Five crown rows. Check: 5 times 8 equals 40 mm, matching the measured crown midline.

Reason: Divide the measured length by the chosen interval: 40 divided by 8 equals 5. Multiplying the row count by the interval returns the measured length, so the spacing is consistent.

Check: Recount the rows and multiply by 8 mm; the product should equal 40 mm.

Task 2

A jaw guide measures 33 mm. You want three jaw rows. What interval should you use, and how many millimetres does each row occupy along the guide?

Answer: Use an 11 mm interval. Each row occupies 11 mm along the jaw guide. Check: 3 times 11 equals 33 mm.

Reason: Divide the jaw guide length by the desired row count: 33 divided by 3 equals 11. The interval is the length per row along the guide.

Check: Measure each marked interval on the jaw guide; each should be 11 mm, and three intervals should total 33 mm.

Task 3

A head outline has a crown midline of 28 mm and a jaw guide of 21 mm. Choose a single interval that divides both lengths evenly, state the row counts, and describe one wrapping adjustment at the snout taper.

Answer: Use a 7 mm interval. Crown rows: 28 divided by 7 equals 4 rows. Jaw rows: 21 divided by 7 equals 3 rows. At the snout taper, narrow the arcs gradually and offset alternating rows by half a scale width so the pattern interlocks without crossing the taper point.

Reason: The interval must divide both 28 and 21 evenly; 7 is the largest simple divisor. Row counts come from dividing each length by 7. The snout taper requires narrower arcs because the head width decreases there.

Check: Multiply 4 by 7 to get 28 mm and 3 by 7 to get 21 mm; both match the measured guides. Confirm no arc crosses the snout taper point.

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Original tasks 4 / complete keys

Task 4

After drawing, you count 6 crown rows at a 5 mm interval on a crown midline measured at 32 mm. Is the spacing within the 10 percent check? Show the arithmetic and state one adjustment if needed.

Answer: The planned total is 6 times 5 equals 30 mm. The measured length is 32 mm. The difference is 2 mm, which is 2 divided by 32, about 6.25 percent, so it is within 10 percent. No adjustment is required, though you could increase one interval slightly to 5.3 mm if you want a closer match.

Reason: The check compares row count times interval to measured length. A 2 mm difference on 32 mm is about 6.25 percent, below the 10 percent threshold.

Check: Recalculate 6 times 5 and compare to 32; confirm the percentage difference is below 10 percent.

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Source rubric / reflection

- [ ] Rows follow the crown midline and jaw guide without crossing them.
- [ ] Row spacing is consistent within each zone and matches the recorded interval.
- [ ] Arcs bend with the local curvature rather than remaining straight.
- [ ] Alternating rows are offset so scales interlock at curves.
- [ ] The arithmetic check (row count times interval) is within 10 percent of the measured zone length.
- [ ] Scale shapes are consistent and readable, though the specific shape may vary.

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