Draw a Coiled Serpent: Scale Rows and Open-Mouth Construction

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

Task 1

Plan a coil with four turns spaced 1.5 cm apart. What is the approximate distance from the center to the outer turn?

Answer: About 4.5 cm.

Reason: Four turns create three intervals at 1.5 cm each: 3 × 1.5 = 4.5 cm from center to outer turn.

Check: Count the intervals between turns (one fewer than the number of turns), multiply by the spacing, and compare with your drawing.

Task 2

A scale row is 3 cm long and overlaps the previous row by 1 cm. What fraction of the row is overlapped?

Answer: One third.

Reason: 1 cm overlap divided by 3 cm row length equals one third.

Check: Divide overlap length by row length and compare to the one-third convention.

Task 3

A mouth panel uses a 60-degree opening. The lower jaw line is 4 cm long and the tongue is 3 cm long. Is the tongue likely to stay inside the jaw?

Answer: Yes, if the tongue starts at the hinge and follows the lower jaw curve.

Reason: A 3 cm tongue is shorter than the 4 cm lower jaw, so it can fit inside if placed correctly.

Check: Compare tongue length to lower jaw length and trace the tongue inside the jaw outline.

Task 4

You draw five scale rows across a 2 cm body width. Each row overlaps the previous by about 0.7 cm. Is the overlap close to one third of a 2 cm row?

Answer: Yes, approximately.

Reason: One third of 2 cm is about 0.67 cm, and 0.7 cm is close to that value.

Check: Divide 2 cm by 3 and compare with the stated overlap.

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Source rubric / reflection

- [ ] Coil is one continuous spiral with visible gaps between turns.
- [ ] Body width is consistent and tapers near the tail.
- [ ] Scale rows follow the body curve and overlap by roughly one third.
- [ ] Mouth panel has a clear hinge, two jaw lines, and a tongue inside the lower jaw.
- [ ] Mouth panel connects to the coil with a short neck line.
- [ ] Valid alternatives are accepted if the convention is consistent and checkable.

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