Draw a Striped Bass: Body, Fins, and Lateral Stripes

Original tasks 1, 2, 3 / complete keys

Task 1

A student draws a striped bass with a 20 cm body length. What total body depth and stripe thickness should they use if they follow the 4:1 depth ratio and one-tenth depth stripe thickness?

Answer: Depth = 20 ÷ 4 = 5 cm; stripe thickness = 5 ÷ 10 = 0.5 cm.

Reason: The convention sets depth as one-quarter of body length and stripe thickness as one-tenth of depth. Scaling from the 18 cm example gives 5 cm depth and 0.5 cm stripes.

Check: Multiply depth by 4 to recover body length (5 × 4 = 20) and multiply stripe thickness by 10 to recover depth (0.5 × 10 = 5).

Task 2

On an 18 cm body, the first dorsal base is from 6 cm to 9 cm. If the body length is increased to 24 cm, what are the scaled first dorsal base positions?

Answer: Scale factor = 24 ÷ 18 = 1.333; positions become 6 × 1.333 = 8 cm and 9 × 1.333 = 12 cm.

Reason: All landmark distances scale proportionally with body length. Multiplying by the scale factor preserves the relative fin placement.

Check: Divide the new positions by the scale factor to recover the original 6 cm and 9 cm.

Task 3

A drawing has a body depth of 6 cm and a stripe thickness of 0.8 cm. Does this match the one-tenth depth convention? If not, what thickness would match?

Answer: No. One-tenth of 6 cm is 0.6 cm, so 0.8 cm is too thick. A matching thickness is 0.6 cm.

Reason: The convention defines stripe thickness as depth divided by 10. Comparing 0.8 cm to 0.6 cm shows a mismatch.

Check: Multiply 0.6 cm by 10 to recover 6 cm depth; 0.8 cm × 10 = 8 cm, which does not match the 6 cm depth.

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Original tasks 4 / complete keys

Task 4

A striped bass drawing uses seven stripe rows on an 18 cm body. If the student keeps the same row spacing but changes the body length to 27 cm, how many rows should they plan if row spacing scales proportionally?

Answer: Scale factor = 27 ÷ 18 = 1.5; the number of rows stays seven because row spacing scales with body length, not the count.

Reason: Changing body length scales distances, not the number of rows in the convention. The seven-row pattern remains valid when spacing is scaled.

Check: Confirm that each row gap and stripe thickness is multiplied by 1.5, and that the total of seven rows still fits within the body outline.

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Source rubric / reflection

- [ ] Body is elongated with a length-to-depth ratio near 4:1 and a narrow peduncle.
- [ ] First and second dorsal fins are separated by a notch and placed by landmarks.
- [ ] Anal, pelvic, and pectoral fins are present and positioned consistently with the landmarks.
- [ ] Caudal fin is forked and symmetrical about the centerline.
- [ ] Lateral stripe pattern uses horizontal rows with broken bands; seven rows is the convention but valid alternatives are accepted.
- [ ] Stripes stop before fin bases and no scale rendering is present.
- [ ] All measurements are consistent and scaled proportionally if body length changes.

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