Mandarin Duck Drawing: Sail Feather, Crest, and Patterned Plumage

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

Task 1

With x-height 10 mm, draw a body 30 mm long and a sail feather 20 mm tall. State the two ratios.

Answer: Body ratio 3; sail feather ratio 2.

Reason: Divide each measurement by the x-height: 30 ÷ 10 = 3 and 20 ÷ 10 = 2.

Check: Re-measure in millimetres and confirm both divisions give 3 and 2.

Task 2

A crest is 18 mm long with x-height 12 mm. Is it within 0.3 of the target ratio 1.5?

Answer: Yes. 18 ÷ 12 = 1.5, which equals the target.

Reason: The ratio is exactly 1.5, so the difference from the target is 0.

Check: Divide 18 by 12 and compare the result to 1.5.

Task 3

You draw three pattern zones: breast 10 mm wide, flank 10 mm wide, and back 10 mm wide. A stripe in the flank crosses 3 mm into the breast zone. Does it meet the 2 mm overlap limit?

Answer: No. The overlap is 3 mm, which exceeds the 2 mm limit.

Reason: Compare the measured overlap (3 mm) to the limit (2 mm); 3 is greater than 2.

Check: Measure the crossing distance with a ruler and compare to 2 mm.

Task 4

With x-height 6 mm, a sail feather is 9 mm tall. What is the ratio, and how many millimetres should it gain to reach the target ratio 2?

Answer: Ratio is 1.5; it should gain 3 mm to reach 12 mm (ratio 2).

Reason: 9 ÷ 6 = 1.5. Target height is 2 × 6 = 12 mm, so 12 − 9 = 3 mm.

Check: Add 3 mm to 9 mm, divide by 6, and confirm the result is 2.

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Source rubric / reflection

- [ ] Sail feather is present behind the shoulder and is clearly taller than wide.
- [ ] Crest sweeps back from the crown and is distinct from the body outline.
- [ ] Patterned plumage is divided into at least three clear zones.
- [ ] Pattern marks stay mostly inside their zones, with no more than 2 mm overlap.
- [ ] Proportions are checked with consistent units and simple arithmetic.
- [ ] Valid alternatives in pattern shape or mark style are accepted if zones remain clear.

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