# Draw Mermaid Scale Rows on a Face: Fan Bands from Cheek to Temple

Original tasks 1, 2 / complete keys

Task 1

On a face oval 10 cm tall and 7 cm wide, place a fan origin one-third up and one-third in from the edge. Draw three guide rays toward the temple. Plan one band with eight scales at the temple end, each about 1 cm wide, overlapping by one-third. The temple arc of the band is 6 cm, and the jaw arc is two-thirds the temple arc length. State how many scales you would plan for the jaw end if each row narrows by 20 percent.

Answer: About nine to ten scales at the jaw end.

Reason: Eight temple scales over a 6 cm arc give about 0.75 cm of arc per scale. Narrowing by 20 percent gives about 0.6 cm per scale at the jaw. The jaw arc is two-thirds as long, so 4 cm divided by 0.6 cm gives about 6.7 scales without overlap; one-third overlap raises the count to about 6.7 divided by two-thirds, roughly 10, so plan nine to ten scales.

Check: Count scales in each band and compare row widths; if the jaw band looks crowded, remove one scale rather than shrinking all scales.

Task 2

A learner draws a band with color A on the left half and color B on the right half with no blended zone. Describe the palette-strip test and the drawing change needed to fix the band.

Answer: Make a three-stroke palette strip with color A, color B, and a blended stroke. Then alternate colors within the band so the transition is soft rather than a hard stripe.

Reason: The palette strip tests the blend before committing. Alternating colors inside the band creates a gradual transition and avoids a hard boundary between the two colors.

Check: Estimate the area of each color in the band; neither should dominate, and the blended zone should be visible between them.

# Draw Mermaid Scale Rows on a Face: Fan Bands from Cheek to Temple

Original tasks 3, 4 / complete keys

Task 3

A band at the temple has an arc length of 6 cm and holds eight scales. The same band at the jaw has an arc length of 4 cm. Using the one-third overlap rule and a 20 percent narrowing per row, explain whether the jaw band should hold more or fewer scales than the temple band and give a checkable count range.

Answer: The jaw band should hold about nine to ten scales, which is more than the eight temple scales because each jaw scale is much narrower.

Reason: Narrower scales pack more densely, while one-third overlap raises the count further. Eight temple scales over 6 cm give about 0.75 cm per scale; narrowing by 20 percent gives about 0.6 cm at the jaw. A 4 cm arc holds about 6.7 scales without overlap; dividing by two-thirds for overlap gives about 10, so plan nine to ten scales.

Check: Measure both arc lengths, count scales in each band, and confirm the jaw count is about nine to ten—more than the eight temple scales because each jaw scale is visibly narrower—while the one-third overlap rule holds.

Task 4

A learner's fan bands cross one another near the temple, and the gaps between band edges vary by more than 0.5 cm. Describe two adjustments that restore consistent spacing without redrawing the whole face oval.

Answer: Redraw the offending guide ray so gaps at the temple differ by no more than 0.5 cm from neighbors, and keep each band edge parallel to its guide ray so bands do not cross.

Reason: Guide rays set band direction and spacing. Adjusting one ray fixes the gap, and keeping band edges parallel prevents crossing without erasing the oval.

Check: Measure gaps between adjacent band edges at the temple and confirm each is within 0.5 cm of its neighbor; trace each band to confirm no crossings.

# Draw Mermaid Scale Rows on a Face: Fan Bands from Cheek to Temple

Source rubric / reflection

- [ ] Fan bands radiate from the cheek origin toward the temple and jaw.
- [ ] Each band uses two colors with a visible blended transition.
- [ ] Scales overlap by about one-third of their width.
- [ ] Rows narrow toward the jaw and hold more, narrower scales over the same arc length.
- [ ] Band edges stay parallel to guide rays and do not cross other bands.
- [ ] Valid alternatives in lean, scale shape, and hand pressure are accepted if overlap, taper, and blend rules hold.
- [ ] Any numerical values used are labeled as hypothetical examples.

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