Fish Scales vs Feathers: Side-by-Side Overlap Drawing

Original tasks 1, 2, 3 / complete keys

Task 1

Draw two rows of fish scales on a baseline. Use arcs about 2 cm wide. The second row must overlap the first row correctly. State the overlap direction.

Answer: The bottom row sits on the baseline. The top row is offset by half an arc width and covers the top edge of the bottom row. The overlap direction is downward.

Reason: Fish scales overlap like roof tiles: each upper arc covers the top edge of the arcs below. Offsetting by half an arc width creates the staggered look.

Check: Check that the top row is offset and that its arcs cover the top edge of the bottom row. Confirm the stated direction is downward.

Task 2

Draw three feathers stacked vertically. Each feather is about 4 cm long. The base of each upper feather must overlap the tip of the feather below. State the overlap direction.

Answer: The lowest feather is drawn first. The middle feather's base covers the lowest feather's tip. The top feather's base covers the middle feather's tip. The overlap direction is upward.

Reason: Feathers layer from base to tip: the base of an upper feather covers the tip of the feather below. Stacking vertically makes the overlap clear.

Check: Check that each upper feather's base covers the tip below. Confirm the stated direction is upward.

Task 3

A student draws scales with upward overlap and feathers with downward overlap. Identify both errors and state the correct overlap direction for each texture.

Answer: The scale error is upward overlap; scales should overlap downward. The feather error is downward overlap; feathers should overlap upward.

Reason: The convention for this lesson is fixed: scales overlap downward like roof tiles, and feathers overlap upward from base to tip.

Check: Compare the student's drawing to the convention. Check that scales cover downward and feathers cover upward.

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Original tasks 4 / complete keys

Task 4

On a 12 cm by 8 cm panel, plan a scale texture with arcs about 1.5 cm wide. How many arcs fit in one row across the 12 cm width? Show your arithmetic.

Answer: 12 cm divided by 1.5 cm equals 8 arcs per row. So 8 arcs fit across the width.

Reason: Divide the panel width by the arc width to find the number of arcs in one row. Use consistent units: both are in centimeters.

Check: Multiply 8 arcs by 1.5 cm to get 12 cm. Confirm the arithmetic matches the panel width.

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Source rubric / reflection

- [ ] Two equal panels are present and labeled.
- [ ] Fish scales use rounded arcs with downward overlap and staggered rows.
- [ ] Feathers use elongated leaf shapes with upward overlap and a vertical stack.
- [ ] Overlap direction is consistent within each panel.
- [ ] A short comparison note is written under each panel.
- [ ] Valid alternative shapes are accepted if the overlap logic matches the convention.

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