Placoid Scale Drawing: Label Dentine Spine and Basal Plate

Original tasks 1, 2 / complete keys

Task 1

Draw a side view of a placoid scale. Use a basal plate oval 6 cm wide and 3 cm tall, centered on a baseline with half below the line. Draw a dentine spine 4 cm tall. Draw a pulp cavity oval 1.5 cm wide inside the basal plate. Label all three parts.

Answer: The drawing shows a baseline, an oval centered on it with 1.5 cm below and 1.5 cm above, a 4 cm cone above the oval, and a 1.5 cm inner oval. Labels 'dentine spine', 'basal plate', and 'pulp cavity' are horizontal and point to the correct parts.

Reason: The basal plate must be partly below the baseline to show it is embedded. The spine rises from the top of the oval. The pulp cavity is inside the basal plate, so its label points to the inner oval.

Check: Measure the oval: 6 cm wide and 3 cm tall. Check that about half is below the baseline. Check that the spine is about 4 cm tall. Read each label and point to the part it names.

Task 2

Draw a top view of a placoid scale. Draw the basal plate as an oval 5 cm wide and 3 cm tall. Draw the dentine spine tip as a small triangle near the center. Label the basal plate and the dentine spine tip. Add a note explaining why the pulp cavity is not labeled.

Answer: The drawing shows an oval with a small triangle near the center. Labels 'basal plate' and 'dentine spine tip' are horizontal. A note says the pulp cavity is inside the basal plate and not visible from the top.

Reason: In top view, the spine appears as a tip or ridge, not a full cone. The pulp cavity is internal, so it may be omitted with a note. Labels must match the side view words.

Check: Check that the oval is 5 cm by 3 cm. Check that the triangle is near the center, not on the outer edge. Read the note and confirm it explains the missing pulp cavity label.

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Original tasks 3, 4 / complete keys

Task 3

Draw a side view and a top view side by side. Use the same label words in both views. In the side view, label dentine spine, basal plate, and pulp cavity. In the top view, label dentine spine tip and basal plate. Check that no label lines cross.

Answer: Two drawings are separated by at least 3 cm. The side view has three labels; the top view has two labels using the same words plus 'tip'. No label lines cross, and all words are horizontal.

Reason: Consistent label words help the reader compare views. Keeping lines uncrossed makes labels easy to follow. The top view uses 'dentine spine tip' to match 'dentine spine' in the side view.

Check: Place a ruler along each label line to check it is straight. Trace each line from word to part. Check that no two lines intersect. Read the labels aloud and confirm the words match across views.

Task 4

Use a redraw-from-reference box. First draw and label a side view with a basal plate oval 4 cm wide and 2 cm tall, a dentine spine 3 cm tall, and a pulp cavity oval 1 cm wide. Study it for one minute, cover it, and redraw it in a 10 cm by 8 cm box. Then compare and write one sentence about what you changed.

Answer: The box contains a redrawn scale with a baseline, oval, cone, and inner oval. Labels are added after comparison. The sentence names a specific change, such as 'I moved the pulp cavity label closer to the inner oval.'

Reason: Redrawing from memory tests whether you understand the positions of the parts. Comparing afterward shows what to fix. The sentence documents the check.

Check: Measure the redrawn oval and spine against the original sizes. Check that the basal plate is on the baseline and the pulp cavity is inside it. Read the sentence and confirm it describes a real change.

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Source rubric / reflection

- [ ] Basal plate is drawn as an oval centered on the baseline, with part below the line.
- [ ] Dentine spine is drawn as a cone or triangle rising above the basal plate.
- [ ] Pulp cavity is drawn as a small space inside the basal plate.
- [ ] Side view and top view are both present and clearly separated.
- [ ] All three parts are labeled in the side view with horizontal words.
- [ ] Label lines touch the correct part and do not cross each other.
- [ ] Label words are spelled correctly and used consistently across views.
- [ ] Redraw-from-reference box is used and compared with the first drawing.

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