Archaeological Field Drawing: Strata, In-Situ Artifacts, and Scale

Original tasks 1, 2, 3 / complete keys

Task 1

At 1:10, a scale bar has four equal segments of 1.5 cm on paper. What real length does each segment represent, and what total length does the bar show? Use centimeters.

Answer: Each segment represents 15 cm; the total bar shows 60 cm.

Reason: Multiply paper length by the scale factor: 1.5 cm times 10 equals 15 cm per segment. Four segments give 15 times 4 equals 60 cm.

Check: Reverse the calculation: divide 15 cm by 10 to get 1.5 cm on paper, and confirm four equal segments sum to 60 cm.

Task 2

A drawing shows Layer A from the top frame edge to 3 cm down, Layer B from 3 cm to 7 cm down, and Layer C from 7 cm to the bottom at 10 cm. At 1:20, what real thickness does each layer represent?

Answer: Layer A is 60 cm, Layer B is 80 cm, and Layer C is 60 cm.

Reason: Paper thicknesses are 3 cm, 4 cm, and 3 cm. Multiply each by 20: 3 times 20 equals 60; 4 times 20 equals 80; 3 times 20 equals 60.

Check: Add the paper thicknesses to confirm they equal the 10 cm frame height, then divide each real thickness by 20 to recover the paper values.

Task 3

An artifact outline is drawn 5 cm from the left frame edge and 4 cm below the top frame edge. Layer B begins 3 cm below the top edge. At 1:20, is the artifact inside Layer B, and what are its real distances from the left and top edges?

Answer: Yes, it is inside Layer B; it is 100 cm from the left edge and 80 cm from the top edge.

Reason: The artifact is 4 cm below the top, which is greater than the 3 cm start of Layer B, so it lies within that band. Multiply 5 cm by 20 to get 100 cm, and 4 cm by 20 to get 80 cm.

Check: Compare the artifact depth with the layer start depth before scaling, then divide the real distances by 20 to confirm the paper positions.

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Original tasks 4 / complete keys

Task 4

A scale bar is drawn with three segments labeled 0, 30, and 60 cm, but the paper segments measure 1.2 cm, 1.5 cm, and 1.8 cm. Is the bar consistent at 1:20? Explain and give a corrected equal segment length in centimeters on paper.

Answer: No, the segments are unequal. At 1:20, a 30 cm real segment should be 1.5 cm on paper, so all three segments should measure 1.5 cm.

Reason: Divide real length by the scale factor: 30 divided by 20 equals 1.5 cm. The drawn segments differ, so the bar is inconsistent. Equal 1.5 cm segments would correctly represent 0, 30, and 60 cm.

Check: Multiply the corrected 1.5 cm segment by 20 to get 30 cm, and confirm three equal segments produce labels 0, 30, and 60 cm.

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Source rubric / reflection

- [ ] Scale ratio and unit are stated clearly.
- [ ] Scale bar segments are equal, measured, and labeled in real units.
- [ ] Three strata are drawn with distinct, keyed boundary styles.
- [ ] Each stratum has a short label placed near its band.
- [ ] Artifact is drawn within the correct layer and its embedded edge is marked.
- [ ] Lettering style is consistent and legible; x-height convention is followed for lowercase labels.
- [ ] Annotation checklist is completed and accurate.

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