Draw a Layered Mountain Range: Overlapping Ridges for Depth

Original tasks 1, 2, 3 / complete keys

Task 1

A drawing has three ridges. The far ridge has 5 peaks, the middle ridge has 4 peaks, and the near ridge has 3 peaks. The middle ridge overlaps the far ridge 3 times, and the near ridge overlaps the middle ridge 2 times. What is the total number of overlap points?

Answer: 5 overlap points.

Reason: Add the middle-over-far overlaps (3) and the near-over-middle overlaps (2): 3 + 2 = 5. Peak counts do not affect the overlap total.

Check: Count each place where a nearer ridge line is unbroken across a farther ridge. Confirm 3 middle-over-far and 2 near-over-middle crossings.

Task 2

On a 20 cm by 15 cm frame, you divide the height into three equal bands. What is the height of each band in centimeters?

Answer: 5 cm per band.

Reason: Divide the total height by 3: 15 cm ÷ 3 = 5 cm. The width does not affect band height.

Check: Measure each band with a ruler; each should be 5 cm. Add the three band heights to confirm 15 cm total.

Task 3

A student draws the far ridge with a thick line and dark shading, and the near ridge with a thin line and light shading. According to the lesson convention, what is wrong and how should it be fixed?

Answer: The depth convention is reversed. The far ridge should use a thin line and light shading; the near ridge should use a thick line and dark shading.

Reason: The lesson assigns thin/light to far and thick/dark to near so that nearer ridges appear stronger. Reversing these cues makes the far ridge look closer than the near ridge.

Check: Compare line weight and shading value across the three ridges. The far ridge should be the thinnest and lightest; the near ridge should be the thickest and darkest.

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Original tasks 4 / complete keys

Task 4

You plan a mountain range with 4 far peaks, 3 middle peaks, and 2 near peaks. The middle ridge must overlap the far ridge at least twice, and the near ridge must overlap the middle ridge at least twice. If you draw exactly the minimum overlaps, how many total overlap points will the drawing have?

Answer: 4 total overlap points.

Reason: Minimum middle-over-far overlaps = 2; minimum near-over-middle overlaps = 2. Total = 2 + 2 = 4.

Check: Count unbroken nearer-ridge lines at crossings. There should be 2 middle-over-far and 2 near-over-middle, totaling 4.

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Source rubric / reflection

- [ ] Three distinct ridge layers are present: far, middle, near.
- [ ] Far ridge uses thinner lines and lighter shading than middle and near ridges.
- [ ] Middle ridge overlaps the far ridge in at least two places with unbroken nearer lines.
- [ ] Near ridge overlaps the middle ridge in at least two places with unbroken nearer lines.
- [ ] Near ridge occupies more vertical space than the far ridge.
- [ ] Shading strokes run consistently from ridge top toward valley.
- [ ] No extra landscape elements (trees, buildings, water) are included.
- [ ] Valid alternative conventions are acceptable if line weight and shading value still increase from far to near and overlaps remain unbroken on the nearer ridge.

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