Hebrew Letters on Graph Paper: Grid Alignment Construction

Original tasks 1, 2 / complete keys

Task 1

Using 4 mm squares, a baseline at the bottom grid line, and a midline three squares above, construct a letter with one vertical stroke on a vertical grid line from baseline to midline and a horizontal bar on the midline extending one square to the right. Describe the steps and check the midline height in millimeters.

Answer: Mark baseline and midline three squares up. Draw the vertical stroke on a vertical grid line from baseline to midline. Draw the horizontal bar on the midline one square to the right. Check: three squares times 4 mm equals 12 mm midline height.

Reason: The midline height is three squares, so the distance is 3 × 4 mm = 12 mm. The horizontal bar lies on the midline and extends one square, so its length is 4 mm.

Check: Count three squares from baseline to midline and measure 12 mm with a ruler; confirm the bar is on the midline and one square long.

Task 2

On 6 mm squares, place a baseline at the bottom grid line and a midline four squares above. Construct two vertical strokes three squares apart, both from baseline to midline, and a top bar on the midline connecting them. What is the distance between the vertical strokes in millimeters?

Answer: The distance is three squares times 6 mm equals 18 mm. Mark baseline and midline four squares up (24 mm). Draw the left vertical stroke on a vertical grid line, the right vertical stroke three squares to the right, and the top bar on the midline connecting them.

Reason: Spacing is three squares, so 3 × 6 mm = 18 mm. Midline height is four squares, so 4 × 6 mm = 24 mm.

Check: Count three squares between strokes and measure 18 mm; verify midline is four squares (24 mm) above baseline.

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Original tasks 3, 4 / complete keys

Task 3

A learner uses 5 mm squares and marks a midline five squares above baseline. They draw a vertical stroke from baseline to midline but it crosses the midline by one square. Describe the error and the fix, and state the intended midline height in millimeters.

Answer: The stroke is too tall by one square. Fix by ending the stroke exactly on the midline. The intended midline height is five squares times 5 mm equals 25 mm.

Reason: Crossing the midline by one square means the stroke extends 5 mm beyond the intended height. The correct height is 5 × 5 mm = 25 mm.

Check: Count five squares from baseline to midline and measure 25 mm; confirm the stroke ends on the midline without crossing.

Task 4

Using 3 mm squares, construct a letter with a baseline at the bottom grid line and a midline six squares above. Draw a horizontal bar on the midline two squares long and a vertical stroke from baseline to midline at the left end of the bar. State the bar length and midline height in millimeters, and describe one valid style variation.

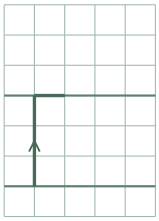
Answer: Bar length is two squares times 3 mm equals 6 mm. Midline height is six squares times 3 mm equals 18 mm. One valid style variation is placing the vertical stroke one square to the right of the bar's left end, provided it is documented and applied consistently.

Reason: Length and height are simple multiples of the square size. Style variations are allowed if recorded and consistent.

Check: Count two squares for the bar and six squares for the midline; measure 6 mm and 18 mm; confirm the documented variation is applied consistently.

Task 1 / construction

Chosen worksheet construction / one grid cell = 4 mm

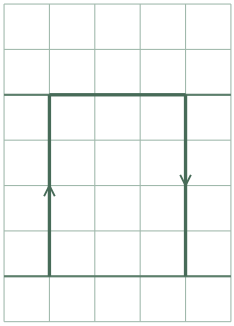


Vertical + top bar

Midline height = 3 x 4 = 12 mm. Bar/spacing = 4 mm. Unspecified surrounding grid cells are a chosen display.

Task 2 / construction

Chosen worksheet construction / one grid cell = 6 mm

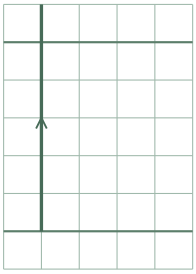


Two pen paths: 1 vertical + top; 2 right vertical

Midline height = 4 x 6 = 24 mm. Bar/spacing = 18 mm. Unspecified surrounding grid cells are a chosen display.

Task 3 / construction

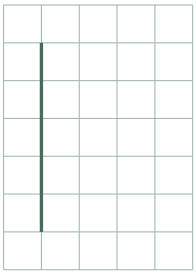
Chosen worksheet construction / one grid cell = 5 mm



1

Given error: extends 1 square above the midline

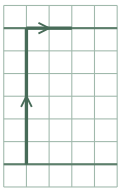
Midline height = 5 x 5 = 25 mm. Bar/spacing = 0 mm. Unspecified surrounding grid cells are a chosen display.



Corrected end at midline

Task 4 / construction

Chosen worksheet construction / one grid cell = 3 mm



Vertical + top bar

Midline height = 6 x 3 = 18 mm. Bar/spacing = 6 mm. Unspecified surrounding grid cells are a chosen display.

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Source rubric / reflection

- [ ] Baseline is marked on the bottom grid line in each cell.
- [ ] Midline is marked at a recorded number of squares above baseline and labeled as a hypothetical example.
- [ ] Vertical strokes align to vertical grid lines or documented style positions.
- [ ] Horizontal strokes align to horizontal grid lines or the midline.
- [ ] Spacing between key strokes matches the model by square count.
- [ ] Style variations are documented and applied consistently.
- [ ] Units are consistent throughout measurements.

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