Block Lettering on Graph Paper: Grid-Aligned Letters and Spacing

Original tasks 1, 2, 3 / complete keys

Task 1

A word has 5 letters, each 4 squares wide, with gaps of 2 squares. What is the total word width in squares?

Answer: 28 squares.

Reason: Five letters of width 4 total 20 squares. There are 4 gaps of 2 squares, totaling 8 squares. 20 + 8 = 28.

Check: Recount letters (5), gaps (4), and confirm 5 x 4 + 4 x 2 = 28.

Task 2

A word must fit within 20 squares. It has 4 letters of width 3 squares each. What is the largest whole-square gap that fits, and how many squares remain unused?

Answer: The largest whole-square gap is 2 squares, leaving 2 squares unused.

Reason: Four letters of width 3 total 12 squares. There are 3 gaps. A gap of 2 gives 6 squares, and 12 + 6 = 18, which fits within 20 with 2 squares unused. A gap of 3 would give 9 squares and a total of 21, which exceeds 20.

Check: Test gap 2: 12 + 3 x 2 = 18. Test gap 3: 12 + 3 x 3 = 21. Confirm 18 is within 20 and 21 is not.

Task 3

A letter is 6 squares tall with a 2-square stroke. How many squares tall is the open space inside a block O built as a rectangle ring?

Answer: 2 squares tall.

Reason: The top stroke takes 2 squares and the bottom stroke takes 2 squares, leaving 6 - 2 - 2 = 2 squares of open space between them.

Check: Add top stroke, open space, and bottom stroke: 2 + 2 + 2 = 6, matching the letter height.

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Original tasks 4 / complete keys

Task 4

Design the word HI on graph paper with height 5 squares, stroke 1 square, and gap 1 square. State your letter widths and total word width, then judge the result against the rubric.

Answer: One acceptable plan: H is 3 squares wide and I is 1 square wide, with a 1-square gap. Total width is 3 + 1 + 1 = 5 squares. The drawing is judged against the rubric rather than a single correct picture.

Reason: Letter widths are a design choice. H needs at least 3 squares to show two stems and a crossbar at 1-square stroke; I can be a single column. The gap is counted once because there are two letters.

Check: Confirm height is 5 squares, stroke is 1 square, the gap is 1 square, and all edges sit on grid lines; then score against the rubric criteria.

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Source rubric / reflection

- [ ] Every letter is the planned height in whole squares, measured from baseline to top.
- [ ] Stroke thickness matches the planned number of squares throughout the word.
- [ ] Each letter's width matches its planned width in squares.
- [ ] Gaps between letters are equal and counted in whole squares.
- [ ] All letter edges sit on grid lines rather than between them.
- [ ] The word is legible and consistent with the planned height, width, stroke thickness, and spacing.

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