Draw a Simple Dog Bone on Graph Paper: Grid Steps and Proportion Checks

Original task 1 / independent drawing and calculation

Task 1

On a hypothetical grid, plan a horizontal dog bone 8 cells long and 4 cells high at each lobe, with a 2-cell shaft. State the lobe width you choose and the shaft offset.

Keep the original task measurements. Use the full drawing sheet in this PDF for a response needing more room; use the stated paper size when a task specifies larger paper.

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Original task 2 / independent drawing and calculation

Task 2

A student draws a bone with left lobe height 5 cells and right lobe height 6 cells on the same guide line. What is the count error and how should it be fixed?

Keep the original task measurements. Use the full drawing sheet in this PDF for a response needing more room; use the stated paper size when a task specifies larger paper.

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Original task 3 / independent drawing and calculation

Task 3

Plan a vertical dog bone 9 cells tall and 4 cells wide at each end, with a 2-cell shaft. Describe where the guide line goes and how you check symmetry.

Keep the original task measurements. Use the full drawing sheet in this PDF for a response needing more room; use the stated paper size when a task specifies larger paper.

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Original task 4 / independent drawing and calculation

Task 4

Your paper's small squares measure 5 mm per side as a hypothetical example. A planned bone is 12 cells long. What is the drawn length in millimeters, and what should you record?

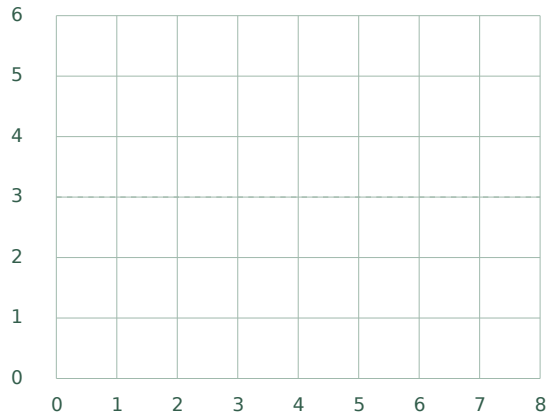
Keep the original task measurements. Use the full drawing sheet in this PDF for a response needing more room; use the stated paper size when a task specifies larger paper.

Full drawing sheet / reusable blank workspace

Reusable full drawing sheet for Tasks 1 to 4. Print another copy when needed. Keep all original task measurements; if a task specifies larger paper, use that paper size.

Source-counted dog-bone plan

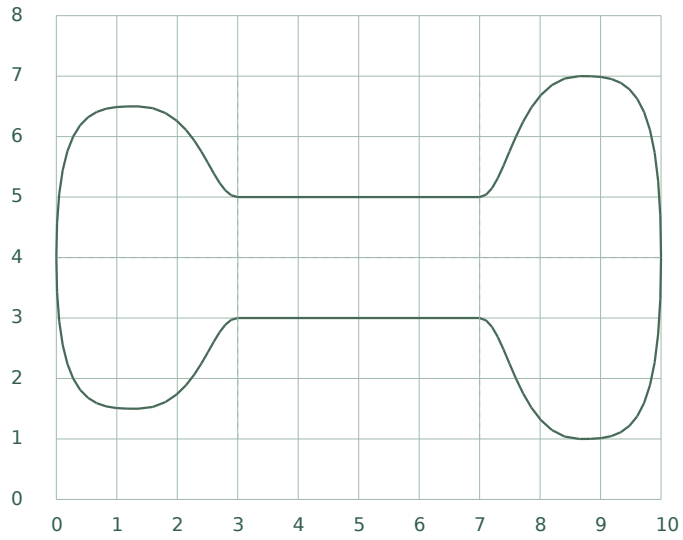
Given long axis: 8 cells / lobe height 4 / shaft 2



Counted rounded lobes and connecting shaft form one outer contour. The long guide follows the horizontal or vertical axis. Student grids are intentionally unfilled.

Given unequal lobes / diagnose before repair

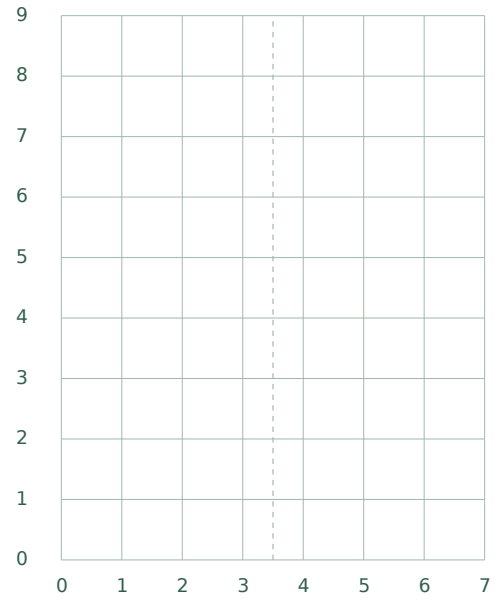
Long axis 10 cells / lobe heights 5, 6 / shaft 2 / chosen lobe widths 3



The prompt gives only lobe heights 5 and 6. Other dimensions here are a clearly chosen layout. The key shows one valid fix: reduce the right lobe to 5, leaving equal offsets around the guide.

Source-counted dog-bone plan

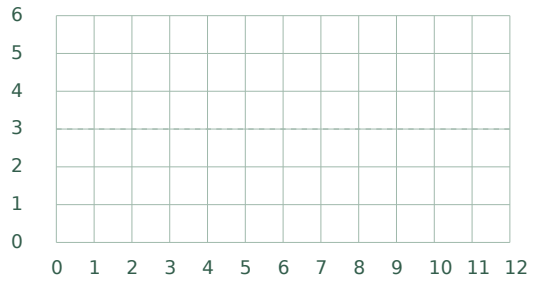
Given long axis: 9 cells / end width 4 / shaft 2



Counted rounded lobes and connecting shaft form one outer contour. The long guide follows the horizontal or vertical axis. Student grids are intentionally unfilled.

Source-counted dog-bone plan

Given long axis: 12 cells / measured cell side 5 mm



Task 4 actual printed cells measure 5 mm. The plan is 12 cells long. Record the count and measured cell size separately, then calculate the length in millimeters.