Draw a Beam Balance Scale: Beam, Pans and Pointer

Ordinary topic reference / separately checked pixels



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Original worked example / unchanged complete key

Prompt: Draw a level beam balance with a beam length of 120 mm, a pivot at the center, suspension points 50 mm from the pivot on each side, and a pointer 40 mm long below the pivot.

Answer: A front-view scale with a vertical centerline, pivot circle at the center, horizontal beam 120 mm long, hooks at 50 mm left and right of the pivot, two matching pans hanging by two chains each, and a straight pointer 40 mm long passing through the pivot to a three-mark scale.

Reason: The beam is 120 mm, so each half is 60 mm. Placing hooks at 50 mm from the pivot leaves 10 mm to each beam end and keeps the arms equal. The pointer starts at the pivot center and extends 40 mm downward, ending near the middle scale mark.

Check: Measure both arm lengths from the pivot center; they should both read 50 mm. Check that the beam total is 120 mm and that the pointer passes through the pivot center.