Zedua Experiments

Title: Laboratory steelyard

What is laboratory steelyard?

A steelyard balance, steelyard or steelyard is a straight-beam balance with arms of unequal length. It incorporates a counterweight which slides along the longer arm to counterbalance the load and indicate its weight. A steelyard is also known as a roman steelyard or roman balance

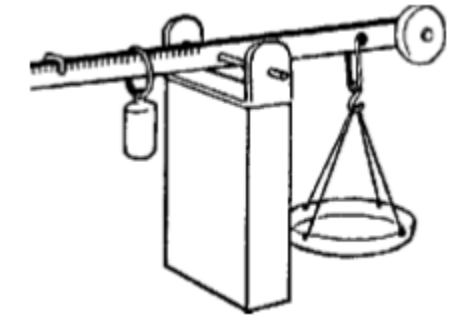
Materials Required:

1. Wooden lath one meter long
2. Strong sewing needle
3. A lead disc
4. A wire
5. A tin lid
6. 'U' shaped metal or two brass mirror plates.
7. A wooden block
8. Two sliders

Procedure:

1. Use a wooden lath one meter long.
2. Balance it on a strong sewing needle stuck through it 3 mm from its upper edge and 12 cm from one end.
3. Use a disk of lead or anything suitably heavy as counter-weight: if lead is used, a disk of it can be 'cast' in a tin lid.
4. Suspend a tin lid as a scale pan 6 cm from the pivot.
5. A piece of U-shaped metal or two brass mirror plates separated by a wooden block will provide a suitable support.
6. Two sliders, one weighing 50 g could be used as a lead suspended by a copper wire: the other of 1 g weight could be in the form of a U resting on the top edge of the lath.
7. The top edge can be calibrated in 6 cm divisions.
8. To use this apparatus, the nearest balance point is found by using the 50 g weight, and the final adjustment is made with the 1 g rider.
9. No divisions are provided for this but the distance from the nearest mark can be quickly obtained by using a pair of dividers.

10.This balance is very quick in action and is satisfactory in use.



Source: Science for kids