

A Folding Osteometric Board (design © A. Chamberlain & C. Cox, University of Sheffield)

Materials

- Hardwood, planed/sanded, 2cm thick, c. 9cm wide, in lengths of 32cm, 30cm and 8cm
- Hard- or softwood sliding block, approx. 8cm × 6cm × 4cm
- Hard- or softwood edge piece, approx. 10cm × 3cm × 2cm, with groove (i.e. L-shaped cross section)
- Strip of thin wood or veneer, approx. 9cm × 1cm × 0.5cm
- 60cm stainless steel measuring rule with millimetre graduations, cut into two sections at the 30cm mark
- 75mm brass butt hinge with 15mm brass screws
- 4 × 40mm brass screws
- Impact adhesive suitable for joining wood and metal, e.g. Evostick

The board is constructed of hardwood to avoid warping due to temperature and humidity changes - old furniture from a skip or a charity shop is a useful source of suitable wood. The sliding block materials may be constructed of softwood. The grooved piece, which ensures that the face of the sliding block is kept parallel to the upright, can be cut from the edge of a tongue-and-grooved floorboard. The steel rule should be engraved in millimetres: avoid using a non-engraved aluminium rule which may be inaccurate. A folding 60cm steel rule (e.g. from B&Q) can be dismantled easily by removing the rivet and then trimmed accurately to 0-30cm and 30-60cm lengths.

Construction

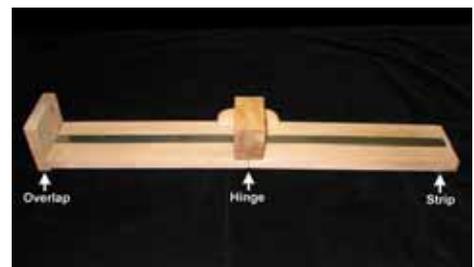
- All wood materials must be cut to accurate right angles and checked with a carpenter's square.
- Join the 32cm and 30cm lengths of wood end-to-end with the hinge positioned on the underside (there is no need to rebate the hinge into the wood) and check that the two sections are aligned when folded and extended.
- Cut a shallow groove as wide as the steel ruler along the midline of the joined sections, deep enough to hold the steel rule with a little extra depth to allow for the glue. This groove can be cut with a router, or by chisel (with care!). Cut the lengths of steel rule to size using a fine hacksaw and file, and glue the sections in place checking that their ends meet flush when the board is extended and that the surface of the rule does not project above the surface of the board. If a non-folding 60cm rule has been cut, remember to allow for the cut width.
- Join the 8cm upright to the free end of the 30cm length with two brass screws, ensuring that it overlaps below the bottom of the 30cm length by approximately 0.5cm to match the thickness of the folded butt hinge. When folded the lengths of the board should be parallel to each other, separated by the folded hinge at one end and by the overlap of the upright board at the other. Check that the upright is truly at right angles to the horizontal lengths and that the end of the steel rule exactly contacts the face of the upright piece.
- Use glue and/or panel pins to attach the thin strip of wood to the underside of the 32cm length, 2cm from the distal end. This should ensure that the board rests horizontally on the table when extended (see Figure).
- Use two brass screws to attach the edge piece at right angles to the bottom face of the sliding block, ensuring that the horizontal surfaces of the blocks are flush and the groove is positioned to run along the edge of the osteometric board. Check that all the angles between the block and the osteometric board are 90°.
- Finish the wood surfaces with beeswax polish to ensure smooth movement of the block over the board.



Folded board. The top half is resting on the hinge at one end and on the overlapping part of the upright at the other.



Underside of the sliding block, showing position of edge piece with groove forming a projecting 'lip'.



Extended board, resting on overlapping part of upright at one end, on the hinge, and on the wood strip at other end.