Fourth Quarter.

Practical Work.—Cutting to dimensions with a chisel, applying force (1) with palm of hand (2) with the shoulder, (3) with a mallet.

Tools.—Paring-, firmer-, and mortise-chisels, paring-board, bench-holdfast, and mallet.

Woods.—Yellow-pine, yellow-deal, and spruce.

STANDARDS VI. AND VII. (WOOD-WORK).

First Quarter.

Practical.—Joining together of two pieces of wood by simple common joints.

Tools.—Grinding, sharpening, and setting of tools.

Woods.—Elementary principles on the growth, structure, and classification of timber.

Second Quarter.

Practical.—Joining together of three or more pieces of wood by simple joints.

Tools.—The lathe, mortise-gauge, the brace and its accessories.

Woods.—Felling and conversion of timber.

Third Quarter.

Practical.—Pattern-making, small simple patterns, where no core-box is required.

Tools.—The lathe, gouge, bow-saw, bradawl, gimlet, screwdriver, nails, brads, and screws.

Woods.—Shrinkage and seasoning of timber.

Fourth Quarter.

Practical.—Pattern-making, small easy patterns, where a simple core-box is required.

Tools.—Sandpaper, glue, and varnish. How to make very simple casts from patterns in wood, lead, or plaster-of-paris, &c.

STANDARD V. (METAL-WORK).

First Quarter.

Practical.—Cutting sheet-iron or steel to any given size and shape, to form external templates or gauges. Before cutting, all lines must be scribed and centre-pops made on the sheet-metal, then cut to within $\frac{1}{16}$ of an inch to these lines, the plate strengthened and finished accurately with the file to the lines, using the straight-edge, square, and calipers. All parallel lines are to be scribed with the surface-gauge and marking-off table.

Knowledge of Tools.—Straight-edge, scriber, square, outside calipers, centre-punch, scribing-block or surface-gauge, and surface or marking-off table.

Materials.—Process of manufacture of sheet-iron and steel from cast-iron and scraps. Nature and properties of sheet-iron and mild steel.

Second Quarter.

Practical.—Cutting and filing sheet-iron or steel, as above, to form internal templates or gauges to accurately fit the external ones.

Drilling.—Before drilling, a circle must be scribed with the dividers the size of the hole, and four or more centre-pops put on the circumference to see if the drill is keeping true to the centre. In large holes two concentric circles should be scribed around the centre, one small and one the size of the hole.

Tools.—Dividers, drills, and simple drilling-machines; the lathe, used as a drill- or boring-machine; surface-gauge and marking-off table.

Material Tool or Cast Steel.—Its properties of tempering, and its manufacture. Use of oil, or soap and water, in drilling. Case-hardening.

Third Quarter.

Practical.—Cutting out, filing, and bending sheet-iron, steel, or brass. In bending, the thickness of the metal should be allowed for. Simple work in soft-soldering, using of letter- and figure-punches.

Tools.—Shearing- and punching-machines, the vice, and the soldering-iron.

Materials.—Solder, tin, brass: their properties and manufacture.

Fourth Quarter.

Practical.—Cutting-out, filing, and cold-riveting of sheet-iron or steel, single- and double-riveted lap-joints, single- and double-riveted butt joints, with straps on one or both sides. The joining of three and four pieces of plate together by riveting.

Tools.—Riveting-hammers and rivets, drifts, and rimers; cotters, keys, nuts, and bolts.

Materials.—Cast-iron: its manufacture and properties. Wood used chiefly in connection with metal: lignum vitæ, ash, hornbeam, greenheart, beech.

STANDARD VI. (METAL-WORK).

First Quarter.

Practical.—Chipping, filing, and surfacing cast-iron. Using cross-cut and flat chisels, bastard, second-cut, smooth, and draw files. Scraping and polishing with tool or emery and oil.

Tools.—Chipping-chisels, files, scrapers, emery-cloth, surface-plates, grindstone, and emery-wheel.

Materials.—Lubricating-oils, tallow and grease, emery and red-lead.