

The circular and elliptical forms, 1 to 8, are made without lifting the chalk while the curve is being obtained. When about to draw a circle, move the chalk round (in the direction of the hands of a watch) once or twice without letting it touch the board; then let it mark very lightly, increasing the pressure very gradually when it is found the required curve is appearing. If the chalk be stopped in its movement round to obtain the curve required, it is better to rub out what has been done and begin again.

Straight lines are obtained by a to-and-fro movement without stopping at the ends of the line, as are the curves 11 and 12. In these cases the chalk should point almost at right angles across the line that is being drawn. This cannot, of course, be so for a portion of the right and left sides of the circle and ellipse, as the wrist must be kept rigid during the whole of the continuous movement. Exercises on the board should not be less than 12 inches across.

Pupils are also to practice these forearm exercises on paper with pencil about three times larger than the figures on Ex. 23. Here the wrist is still to be rigid, while the main movement is at the elbow and in a less degree from the shoulder. No india-rubber is of course to be used, as the action of the pencil on the paper is to be exactly the same as that of the chalk on the board.

The hand or fingers should not touch either the board or the paper in the movement to obtain the required line, and the chalk should make about an angle of 30 with the surface of the board, while the pencil may make any angle from that to 90 degrees with the paper.

This forearm drawing should, like brush drawing, be practised frequently during the term. Pencil practice may with advantage be done in an ordinary scribbler, or in fact on any kind of paper before the work is fit to appear in the drawing book. The paper must be flat, that is without folds or creases, otherwise it will be impossible to get a continuous free line.

**MEMORY DRAWINGS** of objects or specimens from nature are to be continued on the blackboard or on paper and correlated with the forearm just described.

**INVENTIVE DRAWING** or *Design Applied to Decoration*. The brush drawing and set-square work of this book will enable the pupil to get greater variety than formerly in the original designs required. Study the figures, Exs. 1, 23, 24. The lines of construction for those on Ex. 24 are obtained by the 45 and 60 squares. Brush drawing may be added to those purely geometrical arrangements, but it is well to remember that a design should be simple and not overcrowded with small forms.

Although the borders, Ex. 23, are intended for large forearm practice on the blackboard they need not be restricted to that purpose. The leading lines for the borders, Ex. 1, are set out geometrically, on which the "unit

of design" may or may not be transferred before being put in with the brush.

Most of these designs for borders may be adapted to "all-over" designs, and generally a border can with slight modification be obtained from an "all-over" design.

**LETTERING.** Figures or numerals, together with the small letters—upright and sloping—are given in this book. Use a measure and set-squares as much as possible in setting out the work. These small letters, called "lower case," are much more difficult than the capitals in Book 1, especially the sloping or "italic" letters, which incline at an angle of 20 degrees from the perpendicular.

**COLOUR** is to be continued throughout as in the former book. Pupils should now be expected to work more neatly and to put on washes of colour without the streaky appearance due either to an insufficiency of colour on the brush, or the anxiety to improve a wash when it is half dry, both of which mistakes should be avoided. The study of complementary colours is to be continued, and more attention is to be given to the colour of shadows.

**PRACTICAL GEOMETRY.** Pupils are to be provided with two set-squares, one of 45 the other of 60 and 30 degree. These are used for obtaining parallel and perpendicular lines, together with those required for pattern drawing similar to Ex. 24. It is most important that their angles be true, otherwise they cannot be used for anything but parallel lines. When the right angle is true, perpendiculars are possible; if, however, the 45 or 60 angles are inaccurate the designs on Ex. 24 are impossible. (Excellent English squares, reliable in the matter of angle, can be obtained in Vancouver for 5 cents each.)

More accurate construction of the geometrical figures, Book 1, namely: triangles and parallelograms from given sides, diagonals, and angles is now required—analysis of these figures by the usual lines drawn within them. For instance, the diagonals of a rhombus divide it in turn into two equal acute-angled isosceles triangles, and two equal obtuse-angled isosceles triangles. If these isosceles triangles are right-angled, the figure will not be a rhombus but a square. How do the three lines bisecting the angles of an equilateral triangle divide the figure? How are the square and rhombus, or the rectangle and rhomboid related? etc., etc.

**WORKING DRAWINGS.** Owing to the limited space available in this book, only one page is devoted to "working drawings." An envelope is suggested, Ex. 24. After this has been drawn to the centimetre sizes there given, pupils may be asked to get a sheet of stiff paper. Set out the sizes and shapes so that when it is cut out and folded it may be gummed together forming an actual envelope. Although an envelope can scarcely be called a "solid" this is an exercise in the "development of solids," a section of drawing to be dealt with later on.