LESSONS IN GEOMETRY, FOR THE USE OF BEGINNERS

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Lessons in Geometry, for the Use of Beginners by G. A. Hill

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BY

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PREFACE.

THIS book has been prepared to meet the wishes of those who prefer a shorter and easier introductory course in Geometry than that given in the "Geometry for Beginners."

The metric system of units is explained; but all exercises in metric units are confined to lessons placed at the ends of the chapters, and may be omitted if desired.

The method of instruction is that best adapted to the mental condition of pupils between the ages of twelve and sixteen. The training in consecutive reasoning is introduced very gradually, and is confined mainly to the laws of equal triangles and a few of their simple applications.

To one feature of the method the author desires to call special attention; namely, the numerous exercises which involve the use of instruments and drawing to scale. It is assumed that every pupil is provided with ruler, divided scale, pencil compasses, triangle, and protractor. Any objection on the ground of expense has been met by the publishers, who are prepared to supply, at a very low price, these instruments enclosed in a strong wooden box.

Experience shows that for the beginner of Geometry the careful execution of easy constructions is the most useful as well as the most interesting part of the daily lesson. This work calls into action the eye, the hand, and the judgment. It holds the attention. It is attended with the pleasing sense of the successful exercise of new-found power. Under these conditions progress in knowledge is sure to be rapid. The precept, "Do that you may know," finds here a pertinent application.

No teacher, however, can expect to obtain the best results from this kind of work, unless he insists strenuously upon neatness and a reasonable degree of accuracy. Every teacher should lay down a standard of neatness and accuracy, — remembering that his pupils are only beginners working with cheap instruments, — and then should criticise unsparingly every drawing which, tried by his standard, is a slovenly or inaccurate piece of work.

The contents of the book are so arranged that the course may be considerably abridged, if so desired. There are, in all, ninety-six lessons and fifteen drawing exercises. This makes abundant material for a course of three hours per week for a year, or, what is better for the pupil, a course of one hour per week for a year, and a course of two hours per week for the year following. The last two chapters, however, may be omitted, and likewise the lessons in which metric units are used; there will then be left sixty-five lessons and the drawing exercises, or a course of two hours per week for one year.

Geometry, as here presented, should be studied before Algebra. If this is done, pupils, while learning the properties of figures and the measurement of areas and volumes, will see for themselves the great advantage of using letters to represent quantities. Thus the chief stumbling-block to every beginner of Algebra will be removed.

The author takes this opportunity to express his warm thanks to the teachers who have had the kindness to read and correct the proof-sheets. A special acknowledgment of obligation for this assistance is due to Prof. G. A. Wentworth, of Exeter, N.H.; Prof. H. D. Wood, of Trenton, Ga.; Mr. J. E. Clarke, of Chelsea, Mass.; and Mr. E. H. Nichols, of Cambridge, Mass.

G. A. HILL.

Cambridge, Feb. 29, 1888.

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