

It is justly claimed for Euclid that he inculcates accuracy of thought. Most admirably in this respect he does his work. It too often happens, however, that in the class-room triangles are alleged to be equal which are ridiculously unlike, and lines are *proved* to be equal which the eye tells us differ in length by several inches. In fact, in spite of accuracy of thought, the utmost contempt for physical accuracy is often inculcated. The whole spirit of the following pages is accuracy of construction. Only by exact drawing can results be attained, and the pupil will find that inaccuracy means failure. *My object is to make the class-room in geometry a sort of workshop, where exactness in drawing lines of required length, in measuring lines that are drawn, in constructing angles of given magnitude, in measuring angles that are constructed, and generally in constructing all figures, is insisted on. The attitude of the pupil towards his geometrical figures should be that of the skilled mechanic towards an instrument or machine of precision which he is making, where inaccuracy in measurement would mean loss of time and of material, and would be considered evidence of stupidity.*

I do not suggest this book as a substitute for Euclid, but as an introduction to the study of the work of the great geometer, or of some work covering the same ground. Hence I have included the leading geometrical facts reached in Euclid's elements, and have introduced them in nearly Euclid's order. Teachers will find here about one year's work for a class of beginners. If the pupils pursue the subject of geometry no further, I humbly trust that the practical work they have done in connection with this course will have impressed the leading facts of elementary geometry indelibly on their minds; if on the other hand they take up the study of deductive geometry, I hope they will the better, from following this concrete course, appreciate the absolutely general and irrefragable character of Euclid's methods.

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