

**FIRST BOOK OF MATHEMATICS  
BEING AN EASY AND PRACTICAL  
INTRODUCTION TO THE STUDY;  
FOR SELF-INSTRUCTION AND USE  
IN SCHOOLS**

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First Book of Mathematics Being an Easy and Practical Introduction to the Study; For Self-Instruction and Use in Schools by Hugo Reid

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FIRST BOOK OF MATHEMATICS.



## PREFACE.

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THIS little work, so far as I know, is new in its object and plan.

Its design is, to place a body of interesting, practical, and useful mathematical knowledge within reach of that large class in middle and elementary schools, who have not time for Euclid or any such course. The pupil can work at it mostly by himself, with occasional superintendence by the teacher ; or it may be used as a lesson book in classes. He will learn from it the nature of geometrical figures ; how to do the leading problems in practical geometry ; how to construct the leading kinds of plane figures ; to read and understand algebraic expressions, including the simpler equations ; and to solve the principal questions in mensuration, in which numerous practical exercises are given. He will thus become initiated in mathematical language and ideas ; be subjected to a valuable mental exercise ; acquire a body of useful knowledge, thorough so far as it goes ; and lay such a foundation as will make it easy for him to take up the subject afterwards, should taste or professional requirements lead him to recur to it. In

occasional notes, I have pointed out interesting and important geometrical truths, illustrated by the problems.

It is much to be regretted that a large majority of the youth of this country leave school utterly unacquainted with the useful and beautiful truths of algebra and geometry. For them, save a little arithmetic, the noble sciences of the mathematics do not exist. They are sent into the world without that mental training, derived from exercise in the exact definitions, problems, rules of mathematics; without that valuable training of hand and eye, imparted by the careful construction of geometrical figures; unable to work a common question in mensuration; unable to understand a simple algebraic formula; and hence, incapable of comprehending elementary truths in important departments of science and art. They are quite deficient in that early foundation on which to rear an after structure of scientific education or technical knowledge; and, from want of a little rudimentary instruction, are unfit to rise above the lowest grades of work in the mechanical arts.

These radical defects in the education of so many of our youth are owing mainly to four causes:—

The want of a suitable text-book.

The notion that Euclid is the only possible introduction to the study of mathematics.

The time wasted on elementary arithmetic, from the want of a decimal system of money, weights, and measures.

The early age at which children are removed from school.



The present work is designed to supply a suitable text-book. A boy of twelve or thirteen years of age may go through it. He will then have some knowledge of fundamental facts and principles in mathematics; may acquire some skill in the construction of figures and in ordinary questions in mensuration, and will not find an algebraic formula altogether an unknown tongue.

I have had some experience in education, and venture to submit this work as an introduction to mathematics specially for beginners, and containing enough for that large class that leave school before fifteen years of age, who have so much to crowd into a limited time. Though not a demonstrative course, it contains much calculated to impart valuable training, to interest, to be useful, and to excite a taste for further progress. But the teacher will, doubtless, make the pupil aware that there are demonstrations—which he should study when he has time—and give him orally examples of these.

H. R.

LONDON, *February* 1872.



## CONTENTS.

	PAGE
ELEMENTARY DEFINITIONS, . . . . .	1
ELEMENTARY PROBLEMS, . . . . .	12
DEFINITIONS—SECOND SERIES. RECTILINEAL PLANE FIGURES,	27
PROBLEMS FOR THE CONSTRUCTION OF TRIANGLES AND QUADRILATERALS, . . . . .	31
PROBLEMS FOR THE CONSTRUCTION OF EQUIVALENT RECTI- LINEAL FIGURES, . . . . .	38
PROBLEMS RELATING TO THE CIRCLE, . . . . .	46
PROBLEMS RELATING TO THE PROPORTIONS OF LINES AND FIGURES—	
DEFINITIONS, . . . . .	49
PROBLEMS, . . . . .	51
DEFINITIONS—REGULAR POLYGONS, . . . . .	59
PROBLEMS, . . . . .	59
EXERCISES ON SEVERAL OF THE PROBLEMS, . . . . .	66
INTRODUCTION TO ALGEBRA, . . . . .	71
RATIO—PROPORTION, . . . . .	77
THE EQUATION, . . . . .	79
INTRODUCTION TO MENSURATION, . . . . .	89
SIDES OF RIGHT-ANGLED TRIANGLES, . . . . .	90