JUNIOR HIGH SCHOOL MATHEMATICS. SECOND BOOK

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649620821

Junior High School Mathematics. Second Book by E. H. Taylor & Fiske Alllen

Edited by Trieste Publishing Pty Ltd.
Cover @ 2017

www.triestepublishing.com

E. H. TAYLOR & FISKE ALLLEN

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SECOND BOOK

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NEW YORK
HENRY HOLT AND COMPANY

February, 1924

PRINTED IN THE U. S. A.

PREFACE

THIS Second Book of Junior High School Mathematics continues the three lines of work, arithmetic, algebra, and geometry, begun in the First Book. In this, as in the First Book, the primary purpose is to teach the fundamental principles of arithmetic and to give skill in solving applied problems. The algebra is used to generalize the processes of arithmetic and as an aid in solving problems. The notions of geometry that have been presented furnish material for applied problems, the solutions of which use the arithmetic and the algebra.

The first chapters of this book give sufficient practice in the fundamental processes with algebraic symbols to prepare the pupil to use the formula, the equation, and the graph as tools for solving problems. It is believed that the use of algebraic symbols in the seventh and eighth grades, as provided for in these books, followed by a further study in the ninth grade, will give a mastery of algebra not possible in the present plan of giving all of the instruction in algebra in one year.

The processes of arithmetic, algebra, and geometry are unified in the study of ratio and proportion, similar figures, and the mensuration of surfaces and solids. The problem material here is taken largely from geometry. The explanations and methods of solution are simplified by the use of the equation and the algebraic notation.

The difficulties in the application of percentage and other parts of business arithmetic are mainly due to a lack of business experience and to a lack of knowledge of the facts with which the problems deal. Hence the more difficult parts of

business arithmetic were omitted from the work of the seventh year and are here inserted at the end of the eighth year, so as to take advantage of the increased maturity and experience of the pupils. An effort has been made to use in the business arithmetic as much as possible of the pupil's knowledge of algebra. The choice of materials has been determined by the demands of the everyday life of the average citizen rather than by an attempt to cover a large number of topics, many of which will never come within the experience of most people.

The book closes with extended groups of problems which apply the mathematical principles previously taught to conditions under which such problems are usually met. The last few sets of problems are involved in projects planned to follow as closely as possible a series of activities requiring much computation for a genuine purpose. These projects may suggest to the teacher similar projects having particular local interest for the pupils.

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