

# **HEATH'S PRIMARY ARITHMETIC**

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Heath's primary arithmetic by Charles E. White & Bruce M. Watson

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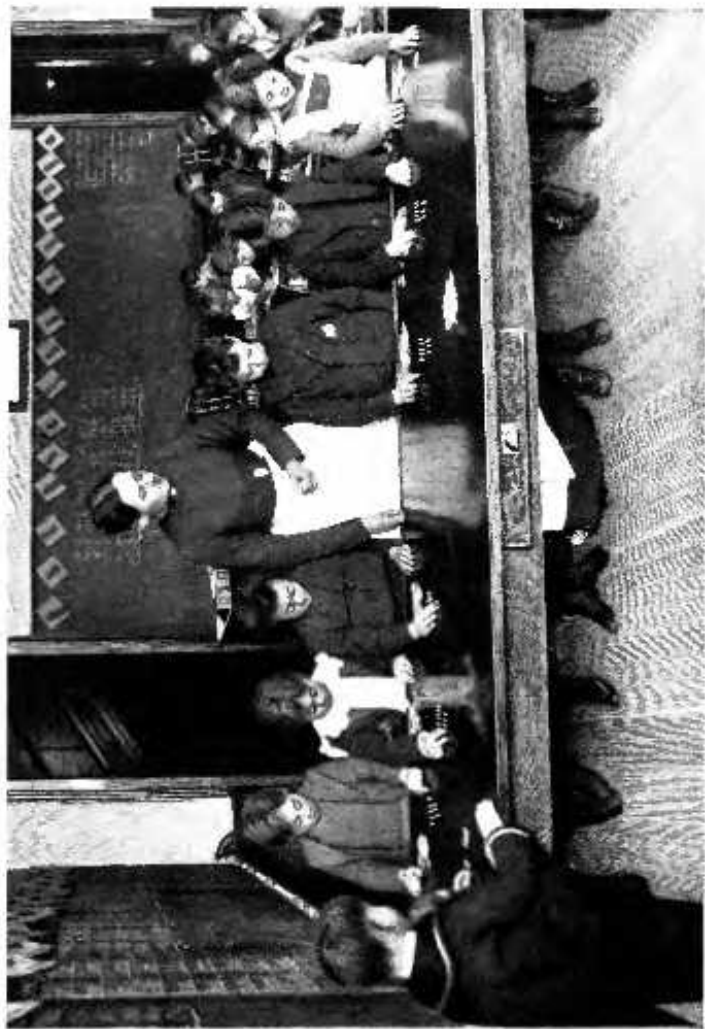
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**CHARLES E. WHITE & BRUCE M. WATSON**

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A CLASS AT THE COUNTING TABLE.

*Frontispiece.*

HEATH'S  
PRIMARY ARITHMETIC

BY  
CHARLES E. WHITE  
AND  
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SYRACUSE, N.Y.



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## PREFACE

In education, as in other affairs of life, there is a tendency, on the part of many, to pursue good ideas to unreasonable extremes, and oftentimes to the exclusion of other ideas quite as good.

This book has been prepared with the design of bringing together the manifest advantages of the topically arranged text-book and the equally manifest advantages of the so-called "spiral" plan.

Each subject is treated by itself as exhaustively as the scope and purpose of the book will warrant. At the same time each new subject introduced is considered in all its relations with and bearing upon preceding subjects.

By the great abundance and variety of the drill work and problems throughout the book, all subjects are kept in constant review, every principle is applied in as many ways as possible, and the unity of the book is preserved.

The order of subjects is determined by the law of dependence, the degree of simplicity of the matter to be taught, and the relative importance of the respective subjects in the business of life.

The development of the various principles and processes has been written with great care and considerably in detail, with a view both to furnish the teacher a definite plan for presenting the work and to help the student in his efforts toward independent achievement.

Both the method and the matter of the book have been tested by actual use in the schoolroom; they are not in any sense an experiment.

Part I is a strictly primary arithmetic. The first few lessons are extremely simple, yet they furnish an illustration of the logical steps in the development of ideas of number. If any child begins the use of the book with elementary notions of number already developed in his mind to a certain point, the judicious teacher will be wise enough to begin where the child's previously acquired knowledge stops.

The development work preceding each table is designed to give the child a concrete understanding of the processes by which the table is made instead of forcing him to memorize abstract results obtained by making arbitrary combinations. But after a table has been thoroughly developed, the pupil



should be drilled in all its combinations until he can give results instantly without reference to the mental processes by which they may be obtained. To this end the drill charts should be used daily until all results can be given correctly without an instant's hesitation.

The problems following the tables were selected from lessons given by scores of successful primary teachers, and it is believed that they are far richer in variety of work and forms of statement than any list prepared by a single individual.

Part II is an introduction to written arithmetic proper. The color work, both here and in Part I, is introduced not merely to embellish the pages, but rather to furnish the best means of illustration and practice in certain arithmetical operations.

Much of the mental work in Part II may be used as supplementary to the questions in Part I.

Definitions are given only when and where they are needed.

In the treatment of fractions the fact that a fraction is an expression of division is kept prominent.

Throughout the book the authors have endeavored to insert whatever may help the pupil to an understanding of principles; to omit whatever is superfluous or may tend to confusion.

B. M. W.

SYRACUSE, February 8, 1901.

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