

**THE ELEMENTS OF  
WRITTEN ARITHMETIC:  
COMBINING ANALYSIS  
AND SYNTHESIS**

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The Elements of Written Arithmetic: Combining Analysis and Synthesis by James S. Eaton

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**JAMES S. EATON**

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AND SYNTHESIS**



THE  
ELEMENTS  
OF  
WRITTEN ARITHMETIC;  
COMBINING  
ANALYSIS AND SYNTHESIS;  
ADAPTED TO  
THE BEST MODE OF INSTRUCTION  
FOR BEGINNERS.

BY  
JAMES S. EATON, M. A.,  
INSTRUCTOR IN PHILLIPS ACADEMY, ANDOVER, AND AUTHOR OF A SERIES  
OF ARITHMETICS.



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## P R E F A C E .

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DURING the few years EATON'S SERIES of ARITHMETICS has been before the Educational Public, it has been demonstrated, by their cordial reception — by their circulation, already extensive and rapidly increasing — that a deep-felt want for books of their high character has been satisfactorily met.

In the vast field at the South now being opened to educational advantages — in the extensive and rapidly growing settlements of the West, and in the cities and manufacturing districts of the older States, there is a large class of pupils whose school days are very limited. To these — next to reading and writing — a brief, practical course of Arithmetic must always form the most useful part of school training. It was to meet the wants of this class that the present work was projected by its author. Owing to an unforeseen event, its completion has devolved upon others. This has been the occasion of some delay in its publication, which however has been taken advantage of to make it as perfect as possible.

This little work then is a short, practical course of Written Arithmetic, embracing the topics actually necessary to be mastered to enable one to pursue with intelligence the ordinary business avocations of life. Special attention has been bestowed upon the FUNDAMENTAL RULES, UNITED STATES MONEY AND PERCENTAGE, and a simple but full exposition of the NEW METRIC SYSTEM is also presented.

In its preparation no labor has been spared to adapt it to the end for which it is designed. It has been submitted to many practical teachers, and thus embodies valuable suggestions from many sources. Especial credit is due MR. J. P. PAYSON, Master of the Williams School, Chelsea, Mass., and it makes its way to the public through the hands of PROF. JAMES H. EATON, Ph. D., son of the author of Eaton's Series of Arithmetics. It is hoped that it will prove worthy to stand beside the former works of the same well-known author.

*Hoston, Sept. 30, 1867.*



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## ELEMENTS OF ARITHMETIC.

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**ARTICLE 1.** A UNIT is *one*, that is, *any single thing*; as, *a horse, a day, an apple, an inch.*

**2.** A NUMBER is a *unit* or a *collection of units*; as, *one, two, six, three men, ten pints.*

**3.** ARITHMETIC is the *science* of numbers, and the *art* of reckoning or computation.

**4.** There are *six* and *only six* different operations in Arithmetic, namely, *Notation, Numeration, Addition, Subtraction, Multiplication, and Division.*

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### NOTATION AND NUMERATION.

**5.** NOTATION is the art of writing or expressing numbers and their relations to each other by means of *figures and signs.*

**6.** NUMERATION is the art of reading numbers which have been written or expressed by figures.

**7.** There are two methods of notation in common use, namely, the *Arabic* and the *Roman.*

**8.** THE ARABIC NOTATION employs *ten figures* to express numbers, namely:

0, 1, 2, 3, 4, 5, 6, 7, 8, 9.  
Naught, One, Two, Three, Four, Five, Six, Seven, Eight, Nine.

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QUESTIONS. 1. What is a Unit? 2. What is a Number? 3. What is Arithmetic? 4. How many operations are there in Arithmetic? What are they called? 5. What is Notation? 6. Numeration? 7. How many methods of Notation in common use? What are they? 8. How many and what figures in the Arabic Notation?