

**AN INTRODUCTION TO THE  
"ARITHMETICAL ANALYSIS,"  
DESIGNED FOR PRIMARY SCHOOLS,  
CONTAINING MENTAL, SLATE AND  
BLACKBOARD EXERCISES**

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An introduction to the "Arithmetical analysis," designed for primary schools, containing mental, slate and blackboard exercises by S. A. Felter

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**S. A. FELTER**

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NATURAL SERIES.

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AN  
INTRODUCTION  
TO THE  
"ARITHMETICAL ANALYSIS,"

DESIGNED FOR  
PRIMARY SCHOOLS,

CONTAINING

Mental, Slate, and Blackboard Exercises.



BY

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## PREFACE.

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THE favorable reception accorded to the "Arithmetical Analysis," by the Teachers of the Public Schools, has induced the author to prepare this little work to supply a want not reached by the former book. The "Analysis" is intended for classes commencing the study of Written Arithmetic; this book is designed for those commencing the study of numbers,\* and is, in fact, an introduction to the larger work.

Teachers of the ungraded Public Schools are often troubled to know what to do with the "little ones,"

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\* The earlier lessons in numbers or arithmetic should be given in connection with *sensible* objects and not from books. In many of our best schools where the method of object-teaching is introduced, lessons in numbers are very successfully given, and all the elementary processes of arithmetic are taught before the book is placed in the hands of the pupil. This method is truly in accordance with the order of nature, and it greatly facilitates the future progress of the learner, while it charms him by its novelty. This system of instruction by objects is now taught in the N. J. State Normal and Preparatory Schools under the supervision of PROF. WM. F. PHELPS. This system was originally introduced into this country in the Public Schools of Oswego, N. Y., where it is now successfully taught.

who are not old enough to spend much time in study, and, consequently, for want of employment, are annoyingly mischievous, or, what is worse for them, listlessly idle. Many teachers within a few years have successfully introduced Mental Arithmetic as an interesting and profitable employment for this class of pupils. Many others, feeling the need of a greater variety of exercises, have introduced, in connection with mental arithmetic (as far as it is possible to do so without the aid of books,) abstract operations in the fundamental rules, thus furnishing something for their pupils to do while they are of necessity at the same time making important advances in the knowledge of Arithmetic. These teachers labor under great disadvantages by being obliged to depend entirely upon the blackboard, with which few schools are properly supplied. It is for the purpose of supplying this want, by furnishing a copious supply of graded exercises both mental and written, suitable for the smallest scholars, that this work has been prepared. The following are some of its peculiarities—

1. It has numerous and *graded* notation exercises for reading and dictation, without rules, thus fol-



lowing the *natural* method of instruction, *facts, first; principles, afterward.*

2. It combines mental with written exercises in such a manner as to interest by constant novelty.

3. The Mental, Written, and Blackboard exercises are copious and *systematically* graded, in order to place difficulties before the pupils in such a manner as to inspire effort rather than create discouragement.

4. It contains mental exercises in the tables of Denominate Numbers, with numerous review questions on the same.

For the exclusive use of the teacher, a few *books*\* will contain answers to the written exercises, but in NO CASE should they be placed in the hands of pupils.

If this little work shall in any manner aid the Teacher in furnishing something for his primary pupils to do, and thus lighten his arduous duties, the author will have been abundantly rewarded for his labor.

COLLEGIATE AND POLYTECHNIC INSTITUTE,  
BROOKLYN, N. Y., Feb., 1863.

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\*Copies containing the answers may be obtained by addressing the publishers.

## PUBLISHER'S NOTICE.

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WHEREVER used, Felter's admirable Text-books have been pronounced by practical Teachers to contain the most perfect system of arithmetical instruction published. The grading of the books is simple, systematic, and complete, and peculiar to the series. The works are the result of a long experience and service in the school-room, and it is believed they will meet the requirements of every grade of schools.

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- Felter's Primary Arithmetic. (Illustrated.)
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FOR TEACHERS.

**Felter's Manual of Instruction.**

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FELTER'S PRIMARY is also elegantly illustrated with a number of suggestive engravings, illustrating the Fundamental Rules and Denominate Tables.

N. B.—*For the use of Private Schools the INTERMEDIATE and GRAMMAR-SCHOOL books are bound in one volume, and called the "PRACTICAL."*

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\* This book is intended expressly for High Schools and Universities, where particular attention is given to the theory of numbers and advanced commercial instruction.

# INTRODUCTION.

## SUGGESTIONS TO TEACHERS.

WE hope a few suggestions on the subject of teaching arithmetic will not be taken amiss by those teachers who may desire to use this little book. There is danger in teaching any of the elementary branches, of falling into a habit of monotony which soon robs both teacher and pupil of nearly all the interest they would otherwise feel in these studies. Variety in the exercises and in the methods of recitation are indispensable to a permanent interest in any study, and especially in elementary arithmetic. We propose, therefore, in a manner as brief and concise as possible, to present a few exercises, and give a few methods of recitation, not as the best or the only ones, but merely as suggestions to the ingenious teacher.

In Notation we may have,

EXERCISE I. Copy on the blackboard after the class have previously copied the same on their slates, say, Lesson III; let the teacher point to an exercise, No. 5, for instance, and require the class to read in concert, speaking promptly, and together, thus: *Four, nine, eight,* &c. Let the teacher continue this exercise until all can read the numbers readily and promptly.

EX. II. Let the teacher require each member of the class to read the same alone, until *each one* can read quickly and accurately.

EX. III. Let the teacher erase the numbers from the blackboard, and then require each member of the class to read the same from his slate, the teacher noting whether the lesson has been correctly copied.

EX. IV. Let the teacher after examining the mechanical execution of the work, and requiring it to be erased, proceed to dictate the same lesson to the class. Let the class then be numbered by *twos*, and at a signal require them to exchange slates. Let the teacher then read aloud the same lesson from the book, and require each