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ON THIS DAY IN WEST VIRGINIA HISTORY
NOVEMBER 25

Ray's Artithmetic

Joseph Ray, the author of widely-used mathematics textbooks, was born near Wheeling on November 25, 1807.

CSO: SS.8.23, ELA.8.1

Investigate the Document: (*Ray's Primary Arithmetic*, 1857)

1. *Ray's Arithmetic* suggests teachers should teach one thing at a time, and _____ _____ _____.

2. What is Lesson I in *Ray's Arithmetic Book*?

Think Critically: Out of 100 questions, 17 dealt with calculating work times and/or man-hours for manual labor, 14 with buying and selling for profit, and 18 with personal finances. Livestock, apples, cloth, wine, tea, flour and sugar figured prominently. Does this suggest anything about the period in which it was written?

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ARITHMETIC:

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By JOSEPH RAY, M.D.,
LATE PROFESSOR OF MATHEMATICS IN WOODWARD COLLEGE.

STEREOTYPE EDITION.

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Entered according to Act of Congress, in the year Eighteen Hundred and Fifty-seven, by WINTHROP B. SMITH, in the Clerk's Office of the District Court of the United States for the Southern District of Ohio.

50876

PREFACE.

ONE of the most important improvements in the art of instruction, is that by which the study of Arithmetic has been rendered interesting and attractive to children.

In the preparation of the following pages, extreme care has been used in making the lessons gradually and almost imperceptibly progressive, so that the little learner is all the while unconsciously, but thoroughly mastering the introductory principles of numbers.

The study of Mental Arithmetic by quite young learners can not be too highly appreciated: it is an exciting and profitable exercise of the juvenile mind, developes the faculties, and gives them valuable discipline for a more vigorous pursuit of other studies in which they may be engaged.

In presenting a remodeled and greatly improved edition of this volume, widely known as Ray's Arithmetic, Part First, grateful acknowledgments are made to the numerous educators who have extended to this, as well as to the other mathematical works by the same author, a large approbation and a wide and increasing patronage.

The method of giving the tables in reverse order, (as on pages 10 to 60), each table followed by simple questions, was presented in 1834, in "Calculations for the Head,"—a small tract on the oral method of instruction,—and has been complimented by adoption in the Primary Table Book of the distinguished Professor Davies.

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DIRECTIONS TO TEACHERS.

THE following suggestions are respectfully submitted to the consideration of Teachers, believing they will be found especially valuable to those who are inexperienced in teaching *young* pupils this important branch of study.

Let the Pupil have the book before him until able to solve the questions readily; then thoroughly and repeatedly review *without* it, the Teacher reading the question distinctly, and the pupil answering it. The learner, in answering, should repeat the problem to be solv

Teach one thing at a time, and teach it thoroughly. This is an important direction as regards all branches of study, but should be more particularly observed in acquiring a knowledge of the elementary principles of Arithmetic, since every successive step in the pupil's progress, depends, in a great degree, upon what has preceded it.

Under no circumstances permit the pupil to leave a lesson until he has entirely mastered it, and is able, not only to solve all the questions it contains, but to solve them readily and understandingly, so that he shall *know* he is right, and be able to tell *why* he knows it.

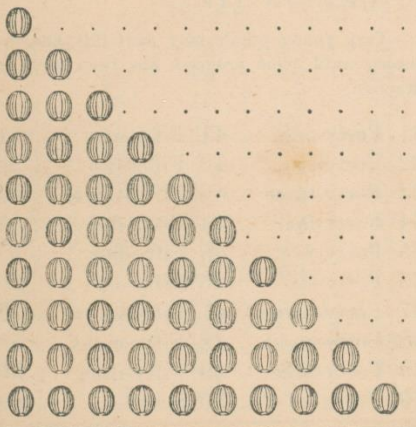
To awaken and fix the attention of the class, let the problems be assigned promiscuously, not in rotation: allow one pupil to read the question, another to answer it, and a third to give the reasons. A strict observance of these directions will break up that dull, listless manner of recitation so frequently seen, and give to the exercise interest, spirit, and variety.

Let no considerations induce the Teacher to advance the pupil to "Ray's Intellectual Arithmetic," (Second Book,) until he has proved by sustaining a final rigid review that he has completely mastered this work,

ARITHMETIC.

NUMERATION AND NOTATION.

LESSON I.

TO TEACHERS.—The object of this lesson is to teach children to count in WORDS: that is, to express in words the number denoting a unit, or a collection of units. Also, to show the FIGURE that represents each number, as high as TEN.

Here is a picture of some balls: the pupil must learn to count them by pointing to each, and saying, *one: one, two: one, two, three*, etc.