

**THE PUPILS'
ARITHMETIC: PRIMARY
BOOK; PART TWO**

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The Pupils' Arithmetic: Primary Book; Part Two by James C. Byrnes & Julia Richman & John S. Roberts

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PRIMARY BOOK
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PRIMARY BOOK

PART TWO

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PREFACE

THE PUPILS' ARITHMETIC is an effort to meet current criticism of methods and results in the teaching of elementary arithmetic.

The manner in which the authors plan to regain for our schools that mechanical skill in computation which characterized an older time, while retaining what is valuable in modern theory and practice, is aptly epitomized in the title,—THE PUPILS' ARITHMETIC.

Part One covers the work of the first three years of school; Part Two, the work of the fourth year.

The authors have made prominent the following features:

I. A large number of exercises in pure arithmetic, affording abundant practice in the mechanical operations.

II. A large number of problems in applied arithmetic, affording practice in gleaning thought from the printed page and in applying the arithmetical principles previously learned.

III. The careful grading of the exercises and problems, the avoidance of long numbers and lengthy processes in problem work, the regular alternation of exercises in abstract number on the one hand, and concrete problems on the other. The exercises, both abstract and practical, have been devised and arranged for oral work, seat work, and class drill.

IV. The model solution of problems by the shortest and most direct of the approved methods of computation.

V. The variety and interesting character of the problems. Occasionally, the problems are grouped about a central idea. However, since such grouping, when forced, frequently leads the teacher away from her object, the authors have elected generally to classify the problems about the mathematical principle or process upon which their solution depends. In the problems almost every phase of life that attracts children is touched upon. Undue prominence is not given to problems in dollars and cents. The *idea of rate* is presented in its manifold aspects of consumption, expenditure, growth, speed, production, accretion, etc. The language used is simple though not childish; stereotyped forms of stating problems have been avoided. Many words and phrases which may require explanation are printed in italics. Such explanation, together with the reading aloud

of problems, serves to remove those difficulties of language which frequently are the real cause of an apparent weakness in arithmetic.

The whole of this volume is designed for pupils' use either in recitations or in study-periods during the fourth school-year. Material for seat work and for home study will be found under the captions "Written Exercise" and "Written Problems." The examples classified as "Drills," "Oral Exercises," or "Oral Problems" are intended for use in recitation-periods, but may be utilized also as material for seat work to be done in a limited time. The rest of the subject-matter, embodying the exposition of principles, the explanations of processes, and the model types of solution, is designed for class use as exercises for reading and study.

In beginning a new topic a silent reading of the text by the pupils should be followed by audible reading and discussion.

Again, in assigning problems for solution teachers should guard against the difficulties of language. Such expressions as "how much more," "half as much again," "rate of speed," "total," "average," etc., express numerical relationships, and are as necessary a part of arithmetical instruction as the multiplication table; hence their meaning and use should be rendered familiar.

Multiplication and Division form the *core* of the