

**EFFICIENCY
ARITHMETIC:
PRIMARY**

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Efficiency Arithmetic: Primary by Charles E. Chadsey & James H. Smith

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PREFACE

The recent movement in testing results in education by means of standard scales and tests has revolutionized methods of instruction in many of the subjects.

One of its results in the field of arithmetic has been to emphasize the necessity of well planned drill work to secure a proper amount of speed and accuracy in the fundamental processes.

This book, recognizing the importance of both speed and accuracy, furnishes a large amount of well selected drill material. On the other hand, the work is planned to be interesting to the child through proper motivated problems and games.

The principle that *the child learns to do by doing* has been kept constantly in mind in the preparation of this volume. The children make many of their own tables, prepare many problems, and enter into real activities which can be readily adapted to schoolroom conditions.

The child's interests and ability have been kept in view throughout the book. The problems are simple and the material is drawn almost entirely from children's every day environment and interests. In a number of instances, the work centers around a topic which may be carried on as a real activity apart from the book. The shopping, in first grade, the games in second and third, the school store and orange problems are examples of this type of work.

The attempt to teach too many topics in arithmetic implies a scattered effort and a low standard of achievement. This book features addition, subtraction, multiplication, and division, with simple work in fractions and denominate measure. Special mention may be made of the Exercises for Practice at the end of the book. There are no formal definitions to be learned. The pupils are to formulate such as are essential, when the necessary ideas have been presented to them.

In accordance with the modern ideas of filing and cataloging, the arrangement of this book is largely topical. This, however, does not necessarily mean that a topic must be followed to its logical close before another may be taken up. But if a teacher wishes to carry a topic through, she may find the material much more easily by this arrangement than any other.

The aim of this book has been not only to provide usable material, but also to furnish suggestions for further work along the same lines.

In the preparation of this Arithmetic, the authors have had the efficient aid of Miss Myra Banks, of the Winnetka (Ill.) Public Schools; and they are also indebted to Miss Katherine L. McLaughlin, of the School of Education, University of Chicago, and to Miss Annie J. Robinson, Principal, Case-Woodland School, Cleveland, for valuable criticisms and suggestions.

INTRODUCTION TO FIRST AND SECOND GRADE WORK

Since pupils in the first and second years are not usually supplied with books, the first pages of this book have been prepared for the teacher's use.

The child's first lessons in number should naturally grow out of his play and schoolroom activities. The material used in these lessons should vary according to the spirit and locality of the school. However, there are certain common ideas, within the comprehension of the pupil beginning the study of numbers, upon which educators fairly well agree.

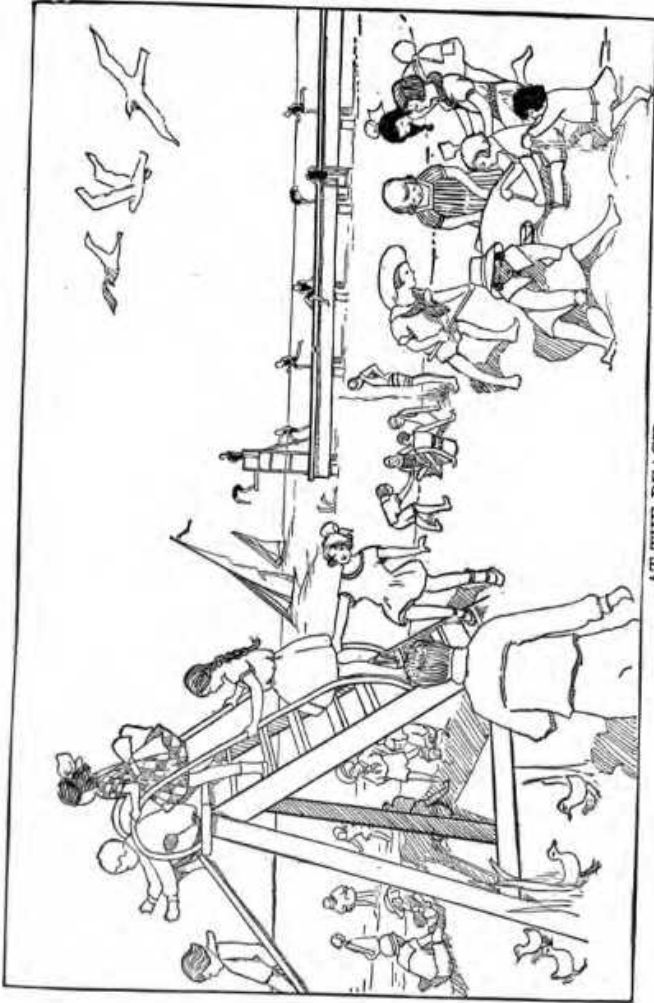
It is not assumed that the work as outlined entirely covers the work that should be done in the first and second grades but types of work are suggested which the teacher can amplify to meet her needs.

The first grade work should furnish a large amount of *concrete experience* with number. The group recognition of objects should be especially emphasized. Constructive work, such as the making of group cards, gives valuable number ideas through first hand experience with objects. Games should be a prominent feature of the number work of these grades. See the teaching suggestions in the back of the book for valuable material on games adapted to these grades.

The more formal work in simple number facts is left for the second grade. The work in this grade should be mainly concrete at first but the teacher should not make the child use objects if he remembers a number fact from previous experience.

The number facts have been purposely presented in an irregular order because that is the way a child meets them in his daily experiences.

Attention is called to the systematic use of concrete problems in connection with each number fact. See pages 19 to 40.



AT THE BEACH

PRIMARY ARITHMETIC

PART I

COUNTING

1. Have you ever been at the beach?
2. Have you played in the sand?
3. Have you watched the gulls and sail-boats?
4. Have you seen boys diving from a pier?
5. How many yachts do you see in the picture?
6. The birds flying are lake gulls. Count them.
7. The other birds are sand-pipers. How many sand-pipers are there?
8. Even on warm days people become chilled from bathing, and enjoy a fire. How many boys are around the fire?
9. Find the little girl sifting sand. How many children are in that group?
10. The children on the chute-the-chutes seem to be having a good time. How many are there?
11. Look through the chute-the-chutes. How many children are playing?
12. See those boys diving. All you can see of one is his legs. How many altogether are diving?