

HOUSEHOLD ARITHMETIC

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Household arithmetic by Katharine F. Ball & Miriam E. West

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HOUSEHOLD ARITHMETIC

LIPPINCOTT'S UNIT TEXTS

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HOUSEHOLD ARITHMETIC

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39 ILLUSTRATIONS



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PREFACE

THERE is a widespread conviction that girls need more training in the kind of mathematics used in everyday life than is afforded in the traditional courses. The complaint is made that girls fail to reason correctly when confronted by practical problems; that they lack skill and foresight in transactions involving expenditures of money; that they do not understand how to make approximations, how to interpret graphs—in a word, that their “mathematics does not function.”

To remedy this condition involves not necessarily more training but different training, as well as a reorganization of the mathematics courses to meet the needs of the students. Since one of the most important needs of girls is an intelligent understanding of home problems, the authors have used the subject matter of home economics for their contribution to the reorganization of arithmetic courses. The same methods might well be applied to subject matter chosen from other realms of experience, and the authors hope to extend their work into other fields to meet other needs.

The purposes of the book may be stated as follows:

- a.* To enable girls to understand and to interpret the economic problems in their own homes.
- b.* To develop skill in the computations and the methods of reasoning involved in everyday affairs so that arithmetic may become a tool in effective living.
- c.* To make girls readily see controlling number relations in practical situations.

The family budget forms the basis for the organization of the subject matter, thus emphasizing the economic aspect of home-making. The material falls naturally into six sections. The first section is devoted to a study of the principles of budget-making and methods of keeping simple accounts. This is followed by a study of each of the five commonly accepted family budget divisions, *viz.*:

food, shelter, clothing, operation, and higher life. These sections are independent of each other, and may be studied in any order that commends itself to the teacher who wishes to adapt the course to the special interests of any given group of girls or to correlate the work with other courses in the curriculum.

The problems included in each section have been selected in accordance with the following criteria:

- a.* The subject matter of the problems should be within the actual or potential experience of girls.
- b.* The problems should be of relatively frequent occurrence in everyday life, of relatively permanent significance, and of relatively wide or general applicability.
- c.* The arithmetical solution should also be the practical solution.
- d.* The technicalities or complexities of the subject matter should not be so great or so difficult as to obscure the arithmetical principles involved.

The book is intended for use in the regular arithmetic classes in the upper grades, in junior and senior high schools, in night schools, and technical classes, and in connection with courses in sewing, cooking, and home management such as are found in technical schools and in vocational schools organized under the Smith-Hughes Law, in which emphasis is placed upon the use of arithmetic in practical situations.

It has been assumed that the girls who will use the book have had preliminary training in the fundamental processes of arithmetic equivalent to that given in the first six or seven years of school. Previous school training in home economics, while desirable, is not an essential for students who have had some experience in their own homes in sewing, cooking, and marketing.

The major part of the book has been tested by class use in the eighth and ninth grades of the Girls' Vocational High School of Minneapolis and in the High School of Plainfield, N. J. The results of five years of experience seem to indicate that this method of organizing and presenting the subject matter has the following advantages:

- a.* It capitalizes the experience of girls and furnishes a reasonable motive for the study of arithmetic.

- b.* It develops skill and accuracy in the fundamental operations of arithmetic through repetition of these processes in their application to the various phases of home life.
- c.* It develops skill in the application of arithmetic to the problems of cooking, sewing and home management.

Generous assistance has come to the authors from so many sources that lack of space forbids specific mention of a large number. But grateful acknowledgment must be made especially to Dr. Henry M. Maxson, Superintendent of Schools of Plainfield, N. J., and Mr. Lindsey Best, Principal, for the opportunity to develop the course in the Plainfield High School; the late Professor Helen Kinne of Teachers College for her unfailing faith in the experiment; Professor David Snedden, Professor Frederick G. Bonser, and Professor William H. Kilpatrick of Teachers College for invaluable criticisms and suggestions; Professor Cleo Murtland of the University of Michigan, and Miss Laura I. Baldt of Teachers College, for reading the manuscript of the section on clothing; Professor Mary Swartz Rose of Teachers College for reading the section on foods; Professor Alice Biester and Miss Ethel L. Phelps of the University of Minnesota, not only for reading the entire manuscript, but also for arranging all the materials for the photographs.

THE AUTHORS.

JANUARY, 1920.

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