

**A MANUAL OF ARITHMETIC:
CONTAINING SUGGESTIONS, METHODS
OF TEACHING, MODELS
OF ANALYSIS, AND ILLUSTRATIVE
SOLUTIONS OF PROBLEMS. A
HANDBOOK FOR TEACHERS**

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649044702

A Manual of Arithmetic: Containing Suggestions, Methods of Teaching, Models of Analysis, and Illustrative Solutions of Problems. A Handbook for Teachers by E. E. White

Except for use in any review, the reproduction or utilisation of this work in whole or in part in any form by any electronic, mechanical or other means, now known or hereafter invented, including xerography, photocopying and recording, or in any information storage or retrieval system, is forbidden without the permission of the publisher, Trieste Publishing Pty Ltd, PO Box 1576 Collingwood, Victoria 3066 Australia.

All rights reserved.

Edited by Trieste Publishing Pty Ltd.
Cover @ 2017

This book is sold subject to the condition that it shall not, by way of trade or otherwise, be lent, re-sold, hired out, or otherwise circulated without the publisher's prior consent in any form or binding or cover other than that in which it is published and without a similar condition including this condition being imposed on the subsequent purchaser.

www.triestepublishing.com

E. E. WHITE

**A MANUAL OF ARITHMETIC:
CONTAINING SUGGESTIONS, METHODS
OF TEACHING, MODELS
OF ANALYSIS, AND ILLUSTRATIVE
SOLUTIONS OF PROBLEMS.
A HANDBOOK FOR TEACHERS**

• A •

MANUAL OF ARITHMETIC

CONTAINING

SUGGESTIONS, METHODS OF TEACHING, MODELS
OF ANALYSIS, AND ILLUSTRATIVE
SOLUTIONS OF PROBLEMS.

A Hand-book for Teachers.

BY

E. E. WHITE, A. M.,

Author of Graded-School Arithmetics, School Registers and Records, etc.

NEW-YORK ✧ CINCINNATI ✧ CHICAGO
AMERICAN BOOK COMPANY

FROM THE PRESS OF
VAN ANTWERP, BRAGO, & CO.

Edw T 118, 90.905

HARVARD COLLEGE LIBRARY

COPY

MISS ELLEN L. WENTWORTH

SEP 13 1941

GRADED-SCHOOL SERIES.

HARVEY'S SPELLER AND READERS.

HARVEY'S LANGUAGE COURSE.

WHITE'S ARITHMETICS.

ECLECTIC GEOGRAPHIES.

SCHUYLER'S ALGEBRA AND GEOMETRY.

COPYRIGHT

1876

BY WILSON, HINKLE & CO.

ECLECTIC PRESS:
VAN ANTWERP, BRAGG & CO.,
CINCINNATI.

PREFACE.

THE author has long contemplated the issuing of a manual of methods and suggestions, to accompany the Graded-School Arithmetics, but circumstances beyond his control have prevented its preparation until the present year.

The MANUAL now presented is specially designed for those teachers who desire to improve their methods of teaching arithmetic, and it is hoped that it may prove as useful as its plan is unique.

Part I is chiefly devoted to the teaching of the more elementary processes. The highest arithmetic in the series is, as a rule, taught better than the lower, and there is less demand for methods and suggestions. There is an earnest inquiry among teachers for approved methods of elementary instruction.

Part II contains illustrative solutions of all the more difficult problems in the two higher books. The solutions of the mental problems are presented as models of analysis, and the solutions of the written problems are designed to

(iii)

be illustrations of slate and blackboard work. In the solutions of both classes of problems, great pains has been taken to present the best possible forms. The explanations added to the solutions of the written problems present, in most cases, what should be given orally by the pupil in the recitation.

The author is indebted to A. G. Farr, of the Columbus (O.) High School for valuable assistance in the preparation of Part II.

LAFAYETTE IND., *May*, 1876.

CONTENTS.

PART FIRST.

	PAGE
Methods of Teaching Arithmetic	9

THE PRIMARY ARITHMETIC.

General Plan	15
Numbering Groups of Objects	16
Addition and Subtraction with Numbers not exceeding Ten	18
Addition and Subtraction with Numbers not exceeding Twenty	22
Tables	20, 24, 33, 35, 38
Blackboard Drills	25, 33, 37, 38
Analysis of Numbers	26
Numbers from Twenty to One Hundred	27
Addition	30
Subtraction	32
Multiplication	34
Division	37
Review of the Four Operations	39
Oral Lessons in Fractions	41
Oral Lessons in Denominate Numbers	43

THE INTERMEDIATE ARITHMETIC.

General Suggestions	53
Notation and Numeration	56
Addition	57
Subtraction	61
Multiplication	62
Division	63
Drills in Rapid Combination	65
Common Fractions	67

	PAGE
Decimal Fractions	69
United States Money	73
Denominate Numbers	74
Percentage	76
Drill Problems	78

THE COMPLETE ARITHMETIC.

General Suggestions	97
An Abridged Course	98
Abbreviated Processes	98

PART SECOND.

THE INTERMEDIATE ARITHMETIC.

Models of Analysis and Illustrative Solutions	3
---	---

THE COMPLETE ARITHMETIC.

Models of Analysis and Illustrative Solutions	11 to 115
Fractions	11
Mensuration	16
Denominate Numbers	18
Compound Numbers	20
Percentage	23
Interest	38
Equation of Payments	60
Proportion	66
Partnership	68
Problems for Analysis	70
Evolution	85
General Review	90
Appendix	110

PART I.

METHODS OF TEACHING ARITHMETIC, WITH SUGGESTIONS, EXPLANATIONS, ILLUSTRATIVE LESSONS, DICTATION EXERCISES, AND DRILL PROBLEMS.