## CATON AND BRADBURY'S MATHEMATICAL SERIES. LESSONS IN NUMBER

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649630189

Caton and Bradbury's Mathematical Series. Lessons in Number by Francis Cogswell

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

FRANCIS COGSWELL

# CATON AND BRADBURY'S MATHEMATICAL SERIES. LESSONS IN NUMBER

Trieste

Eaton and Bradbury's Mathematical Series.

## **•LESSONS IN NUMBER**

174

82

.

BY

FRANCIS COGSWELL, A.M.

SUPERINTERPRET OF SUBJOLS, CAMBRIDGE, MASS.

48

1

## BOSTON:

THOMPSON, BROWN, AND COMPANY, 28 HAWLEY STREET.

## Edue T118.90.300

÷5

- Druch MB Lu Mit yr Brundt new HDa Pliff IAnwrdi 20, fiu

> Copyright, 1890, By Francis Coursweiz.

Endersity Dress : John Wilson and Son, Cambaidor.

13

195

## PREFACE.

A .....

a,

THE following statements show the plan and special features of this book : ---

1. The book is for the use of the *pupil*. It should be given to him after he has learned the fucts of numbers by means of objects and can read easy sentences.

2. The lessons may be copied and then read; or they may be read without copying, the pupil filling the blanks as he reads.

3. Instead of using pictures of a variety of objects to illustrate the different combinations and separations of numbers, pictures of a single object (the ball) are so arranged as to present to the eye these combinations and separations in a uniform manner.

4. While a single object has been taken for this purpose of illustration, many familiar objects have been used in the practical examples.

5. The lessons are carefully graded, and in most cases the character and range of the work are apparent. Explanations which seem to be needed are given in the Table of Contents.

ί.

#### PREFACE.

6. The plan by which several numbers can be supplied where only one could have been printed, makes it possible to condense into a single page what would otherwise require many pages. The pupil soon learns to see in the star the number given by the teacher.

7. A careful examination of this book will show that the examples are not of a fragmentary or random character, but cover systematically a definite portion of arithmetical work. For instance, pages 86 and 87 give all the primary combinations in addition; pages 90 and 91 in connection with pages 70 and 71 provide for adding each number from 1 to 9 to each number from 1 to 100.

8. Incidentally, this book will be helpful in teaching writing, spelling, and language. Its use will relieve the pupil from much of the copying from the blackboard which is so injurious to the cycs.

F. C.

CAMBRIDGE, April, 1890.

iv

## TABLE OF CONTENTS

100

#### WITH

10

### EXPLANATIONS, DIRECTIONS, AND SUGGESTIONS.

### LESSONS I. TO XIII.

The Illustration of all the Combinations and Separations of Numbers to 10

#### LESSONS XIV. TO XXI.

#### LESSONS XXII. AND XXIII.

#### LESSONS XXIV. AND XXV.

Addition of Abstract Numbers, the Answers to be given at sight, no Answer being larger than 10 . . . 36, 37

Pupils should be able to give the answers without heing conscious of the process of addition, just as a person in reading recognizes a word without noticing the separate letters. For illustration, in Exercise I., page 36, the pupil should give the answers without repeating the numbers to be added. He should not say, 2 and 1 are 3; 3 and 2 are 5; 1 and 6 are 7, etc.; but looking at the numbers he should say, 8; 5; 7, etc.

1

#### TABLE OF CONTENTS.

#### LESSONS XXVI. AND XXVII.

Subtraction of Abstract Numbers, the Answers to be given at sight, no Minuend being larger than 10 . 38, 39

Pupils should be able to give the answers without being conscious of sny process of subtraction.

#### LESSON XXVIII.

Multiplication and Division of Abstract Numbers, no Product or Dividend being larger than 10 . . . 40

### LESSONS XXIX. TO XXXIII.

Practical Examples: Lesson XXIX., Addition; Lesson XXX., Subtraction; Lesson XXXI., Multiplication; Lesson XXXII., Division; Lesson XXXIII., Miscellaneous. No Number is larger than 10. . 41-45

#### LESSONS XXXIV. AND XXXV.

Words and Letters, also Punctuation Marks . . . 46, 47

These lessons will be helpful in teaching pupils to recognize *letters*, and to follow plain, simple directions. The words may be taken from any book.

#### LESSON XXXVI.

Numbers from 10 to 20 written in Words, and in Arabic and Roman Numerals, with Illustrations. . . . 48, 49

#### LESSON XXXVII.

Numbers from 20 to 50, with Illustrations . . . . 50, 51

#### LESSONS XXXVIII. AND XXXIX.

.

#### LESSON XL.

#### LESSON XLI.

Tables in M	ulti	pli	C8	tion	8	nd	D	ivis	ion	, 14	N	lum	be	r	beir	ng	
larger that	n 5	0		•	•				•	•1		•	•				55
Explanation	of	the	т	able	of	2'	:	two	2'e	are	4;	thre	-	28	-	6;	four
2's are 8, etc.	28	in 4	4, 1	2; 2	• •	. 6,	3	; 24	s in	8, 4,		c.					

#### LESSONS XLIL TO LIII.

Addition and Subtraction of Abstract and Concrete Numbers, no Sum or Minuend being larger than 20 . . 56-67

#### LESSON LIV.

Addition of Abstract Numbers,	, the Answers to be given	
at sight, no Answer being la	rger than 20	68

#### LESSON LV.

53

Addition of Short Columns . . . . . . . . . . . . . . . . 69

When this lesson is assigned, the teacher will give a number to take the place of the stars. Should the teacher say, "Put 3 in the place of the stars," the first example in Exercise I. would be, 7, 6, 3; in Exercise II., 9, 1, 8, 3; in Exercise III., 3, 2, 4, 5, 1; in Exercise IV., 3, 9, 6, 2, 8. If all the changes indicated are made, there will be over five hundred examples.

#### LESSONS LVI. AND LVIL

1

34