

MY FIRST BOOK OF ARITHMETIC

我的第一本英文数学书

〔美〕爱默生·E·怀特 EMERSON E. WHITE / 编



天津出版传媒集团
天津人民教育出版社



Authored by the University President Emerson E. White
Useful Learning Resources to Study Arithmetic In English



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PREFACE

THE NEW CENTURY EDITION of the "First Book of Arithmetic" covers three years' work in number, and is designed for pupils who have received the oral training necessary for the successful use of a book—such training as is outlined in the author's "Oral Lessons in Number."

Part One presents a progressive series of exercises in elementary processes *with small numbers*. It aims to secure accuracy and skill, and, to this end, it combines in a natural manner the inverse processes of addition and subtraction, and of multiplication and division. These progressive elementary lessons may easily be mastered by third-year pupils.

Part Two is devoted to the elementary processes *with larger integral numbers*, and the written processes are more fully developed. The special aim is to secure accuracy and rapidity in fundamental processes. Great pains have been taken to adapt the exercises and problems to the capability of fourth-year pupils. But few definitions and principles are presented, and these, when practicable, are reached inductively.

Part Three presents the more elementary processes *with fractional numbers*, common and decimal, and their more easy and practical applications. Fractions *with small terms* are used, and these are treated in both oral and written exercises in a similar manner. The use of the greatest common divisor and the least common multiple, and other like formal methods, is avoided, a

full treatment of fractions being reserved for the author's higher book—the *New Complete Arithmetic*. The treatment of measurements and ratio in the present edition is a presentation of these subjects suitable for fifth-year pupils. Attention is also called to the numerous practical problems for general review.

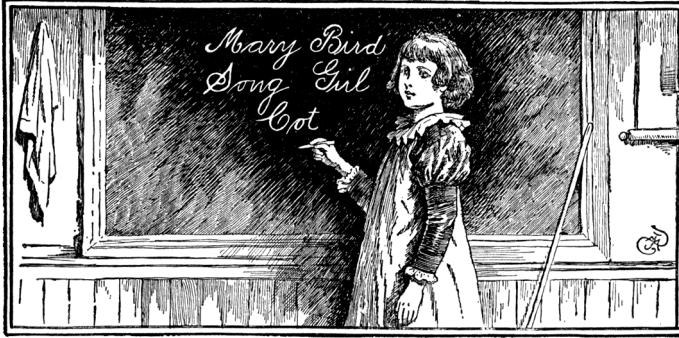
The entire book is carefully adapted to the capability of the pupils in the several grades for whom it is designed, the fact being kept in mind that many of these pupils will not continue in school after the fifth school year. The work affords a full preparation for the higher book.

THE AUTHOR

PART ONE



CHAPTER 1
FIRST LESSONS IN NUMBERS



NUMBERS ONE TO TEN
(1 ~ 10)

1. How many words has Helen written? If she erase 2 words, how many words will be left?
2. Helen has written 5 words; if she write 3 more, how many words will there be?
3. How many words are 4 words and 4 words? 4 words and 5 words? 4 words and 6 words?
4. Ward has 9 marbles; if he give his brother 4 marbles, how many will he have left?
5. How many marbles are 5 marbles and 4 marbles? 5 marbles and 5 marbles? 5 marbles and 3 marbles?
6. How many pencils are 6 pencils and 3 pencils? 6 pencils and 4 pencils? 6 pencils and 2 pencils?
7. How many pencils are 8 pencils less 4 pencils? 9 pencils less 4 pencils? 10 pencils less 4 pencils?

How many are:—

1 and 2?	2 and 1?
1 and 3?	3 and 1?
2 and 2?	—————
1 and 4?	4 and 1?
2 and 3?	3 and 2?
1 and 5?	5 and 1?
2 and 4?	4 and 2?
3 and 3?	—————
1 and 6?	6 and 1?
2 and 5?	5 and 2?
3 and 4?	4 and 3?
1 and 7?	7 and 1?
2 and 6?	6 and 2?
3 and 5?	5 and 3?
4 and 4?	—————
1 and 8?	8 and 1?
2 and 7?	7 and 2?
3 and 6?	6 and 3?
4 and 5?	5 and 4?
1 and 9?	9 and 1?
2 and 8?	8 and 2?
3 and 7?	7 and 3?
4 and 6?	6 and 4?
5 and 5?	—————

3 less 1?	3 less 2?
4 less 1?	4 less 3?
4 less 2?	—————
5 less 1?	5 less 4?
5 less 2?	5 less 3?
6 less 1?	6 less 5?
6 less 2?	6 less 4?
6 less 3?	—————
7 less 1?	7 less 6?
7 less 2?	7 less 5?
7 less 3?	7 less 4?
8 less 1?	8 less 7?
8 less 2?	8 less 6?
8 less 3?	8 less 5?
8 less 4?	—————
9 less 1?	9 less 8?
9 less 2?	9 less 7?
9 less 3?	9 less 6?
9 less 4?	9 less 5?
10 less 1?	10 less 9?
10 less 2?	10 less 8?
10 less 3?	10 less 7?
10 less 4?	10 less 6?
10 less 5?	—————

To TEACHERS.—The above exercises may be recited from left to right, without questions; thus,—

1 and 3 are 4; 3 and 1 are 4; 4 less 1 is 3; 4 less 3 is 1.

8. How many 2's in 4? 2's in 6? 2's in 8? 2's in 10?

9. How many 3's in 6? 3's in 9? 4's in 8? 5's in 10?

10. What two numbers added make 2? 3? 4? 5? 6? 7? 8? 9? 10?

11. Into what two numbers can 2 be separated? 3? 4? 5? 6? 7? 8? 9? 10?

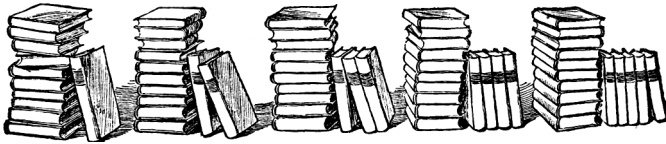
12. Write these figures on your slate:—

0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.

NUMBERS TEN TO TWENTY

(10 ~ 20)

1. How many books are 10 books and 1 book? 10 books and 2 books? 10 books and 3 books? 10 books and 4 books? 10 books and 5 books?



2. How many are 10 and 1? 10 and 2? 10 and 3? 10 and 4? 10 and 5?

3. How many are 10 and 3? 13 less 3? 10 and 4? 14 less 4? 10 and 5? 15 less 5?

4. Write on your slate 11, 12, 13, 14, 15.

5. How many books are 10 books and 6 books? 10 books and 7 books? 10 books and 8 books? 10 books and 9 books? 10 books and 10 books?



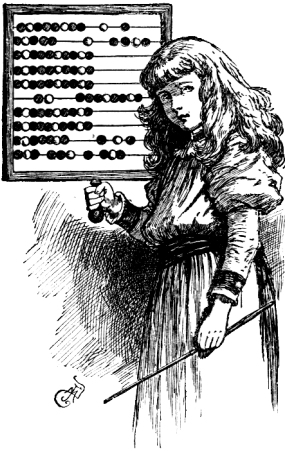
6. How many are 10 and 6? 10 and 7? 10 and 8? 10 and 9? 10 and 10?

7. How many are 10 and 7? 17 less 7? 10 and 8? 18 less 8? 10 and 9? 19 less 9? 20 less 10?
8. How many must be added to 10 to make 15? 10 to make 13? 16? 17? 18? 19? 20?
9. John gave 10 cents for a slate and 8 cents for a primer; how many cents did he give for both?
10. Harry earned 16 cents and gave 6 cents for pencils; how many cents had he left?
11. Write on your slate 16, 17, 18, 19, 20.
12. Copy on your slate and read: 11, 13, 15, 17, 19, 12, 14, 16, 18, 20.

NUMBERS TWENTY TO ONE HUNDRED

(20 ~ 100)

1. Grace has a numeral frame, and there are 10 balls on each wire. How many wires has the frame?



2. How many balls on 2 wires? On 3 wires? 4 wires? 5 wires? 6 wires? 7 wires? 8 wires? 9 wires? 10 wires?
3. Count from 10 to 50 by tens; thus, ten, twenty, etc.
4. Count from 50 to 100 by tens.
5. How many tens in twenty? In thirty? Forty? Fifty? Sixty? Seventy? Eighty? Ninety? One hundred?
6. How many ones in ten? In 2 tens? 3 tens? 4 tens? 5 tens? 6 tens? 7 tens? 8 tens? 9 tens? 10 tens?
7. How many are 20 and 1? 20 and 2? 20 and 3? 20 and 4? 20 and 5? 20 and 6? 20 and 7? 20 and 8? 20 and 9? 20 and 10?
8. Copy and read the following numbers: 21, 22, 23, 24, 25, 26, 27, 28, 29, 30.
9. Count by ones from 20 to 30; 30 to 40; 40 to 50; 50 to 60; 60 to 70; 70 to 80; 80 to 90; 90 to 100.

CHAPTER 2
 ADDITION AND SUBTRACTION

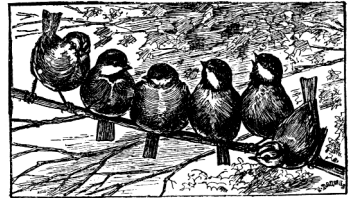
ADDITIVE NUMBERS, ONE AND TWO

ORAL EXERCISES

1. THERE are 6 birds on a limb; if 2 birds fly away, how many birds will be left? 2 birds from 6 birds leave how many?

2. How many birds are 5 birds and 2 birds? 8 birds and 2 birds? 7 birds and 2 birds? 9 birds and 2 birds? 10 birds and 2 birds?

3. How many pears are 8 pears less 2 pears? 7 pears less 2 pears? 10 pears less 2 pears? 11 pears less 2 pears? 12 pears less 2 pears?



TO TEACHERS.—Children should not be taught the analysis of these problems. They should add or subtract, and give the result.

How many are:—

- | | |
|-----------|------------|
| 1 and 1? | 2 less 1? |
| 2 and 1? | 3 less 1? |
| 3 and 1? | 4 less 1? |
| 4 and 1? | 5 less 1? |
| 5 and 1? | 6 less 1? |
| 6 and 1? | 7 less 1? |
| 7 and 1? | 8 less 1? |
| 8 and 1? | 9 less 1? |
| 9 and 1? | 10 less 1? |
| 10 and 1? | 11 less 1? |

How many are:—

- | | |
|-----------|------------|
| 1 and 2? | 3 less 2? |
| 2 and 2? | 4 less 2? |
| 3 and 2? | 5 less 2? |
| 4 and 2? | 6 less 2? |
| 5 and 2? | 7 less 2? |
| 6 and 2? | 8 less 2? |
| 7 and 2? | 9 less 2? |
| 8 and 2? | 10 less 2? |
| 9 and 2? | 11 less 2? |
| 10 and 2? | 12 less 2? |

NOTE. —These tables may be recited from left to right; thus, 1 and 1 are 2; 2 less 1 is 1 ; 2 and 1 are 3; 3 less 1 is 2.

4. How many balls are 7 balls and 2 balls? 17 balls and 2 balls? 27 balls and 2 balls? 37 balls and 2 balls?

5. How many are 6 and 2? 16 and 2? 26 and 2? 46 and 2? 66 and 2? 86 and 2? 96 and 2?

6. How many are 7 and 2? 9 less 2? 27 and 2? 29 less 2? 37 and 2? 39 less 2?

7. How many is 8 less 2? 18 less 2? 28 less 2? 48 less 2? 68 less 2? 88 less 2? 98 less 2?

8. How many are 8 and 2? 10 less 2? 18 and 2? 20 less 2? 28 and 2? 30 less 2?

9. How many are 9 and 2? 11 less 2? 29 and 2? 31 less 2? 49 and 2? 51 less 2?

WRITTEN EXERCISES

	2	2	2	1	2	2
1. Add	<u>7</u>	<u>9</u>	<u>8</u>	<u>9</u>	<u>6</u>	<u>5</u>
2. From	9	11	10	10	8	7
Take	<u>2</u>	<u>2</u>	<u>2</u>	<u>1</u>	<u>2</u>	<u>2</u>

Copy and add:—

Copy and read:—

3.	4.	5.	6.	7.	8.	9.	10.	11.
1	2	2	2	2	10	12	37	80
1	2	2	2	1	13	15	39	83
1	2	2	1	2	14	18	44	87
1	2	2	2	1	19	21	46	86
1	2	2	1	2	17	24	52	90
1	2	2	1	1	16	22	57	93
1	2	2	2	2	20	27	63	96
1	2	2	2	1	25	31	66	97
1	2	2	2	2	23	30	69	85
1	2	2	1	1	26	33	70	54
1	2	2	2	2	29	34	74	68
1	2	1	1	1	28	36	78	42

NEW ADDITIVE NUMBER, THREE

ORAL EXERCISES

1. A boy has 5 balls in his hat and 3 in his hands; how many balls has he?

2. A boy bought 12 oranges, and gave 3 of them to his sister; how many oranges had he left?

3. How many plums are 6 plums and 3 plums? 7 plums and 3 plums?

4. How many plums are 9 plums less 3 plums? 10 plums less 3 plums? 11 plums less 3 plums?



How many are: —

Read and complete: —

1 and 3?	4 less 3?	$1 + 3 =$	$4 - 3 =$
2 and 3?	5 less 3?	$2 + 3 =$	$5 - 3 =$
3 and 3?	6 less 3?	$3 + 3 =$	$6 - 3 =$
4 and 3?	7 less 3?	$4 + 3 =$	$7 - 3 =$
5 and 3?	8 less 3?	$5 + 3 =$	$8 - 3 =$
6 and 3?	9 less 3?	$6 + 3 =$	$9 - 3 =$
7 and 3?	10 less 3?	$7 + 3 =$	$10 - 3 =$
8 and 3?	11 less 3?	$8 + 3 =$	$11 - 3 =$
9 and 3?	12 less 3?	$9 + 3 =$	$12 - 3 =$
10 and 3?	13 less 3?	$10 + 3 =$	$13 - 3 =$

NOTE. —The teacher should make these tables on the board, and, after teaching the signs +, -, and =, drill the pupils until they can read and complete with rapidity.

5. How many are 6 and 3? 9 less 3? 10 less 3? 13 less 3? 12 less 3? 11 less 3?

6. How many are 7 and 3? 10 less 3? 9 and 3? 12 less 3? 8 and 3? 11 less 3? 10 and 3? 13 less 3? 11 and 3? 14 less 3?

7. How many are 7 and 3? 17 and 3? 27 and 3? 47 and 3? 57 and 3? 67 and 3? 87 and 3?

8. How many is 10 less 3? 30 less 3? 40 less 3? 60 less 3? 50 less 3? 80 less 3? 90 less 3?

To TEACHERS. —If a pupil hesitates in adding 3 to 18, or to any other number ending in 8, have him add 8 and 3—the *digital numbers*. Great pains should be taken to prevent counting. In subtracting 3 from 21, or from any other number ending in 1, the pupil, should, if necessary, take 3 from 11 and then 3 from 21.

9. How many are 8 and 3? 11 less 3? 18 and 3? 21 less 3? 28 and 3? 31 less 3? 48 and 3? 51 less 3? 68 and 3? 71 less 3?

10. How many are 9 and 3? 12 less 3? 29 and 3? 32 less 3? 49 and 3? 52 less 3?

11. How many 3's in 12? 3's in 6? 3's in 9?

WRITTEN EXERCISES

1. Add	$\begin{array}{r} 3 \\ \hline 8 \end{array}$	$\begin{array}{r} 3 \\ \hline 9 \end{array}$	$\begin{array}{r} 13 \\ \hline 12 \end{array}$	$\begin{array}{r} 13 \\ \hline 13 \end{array}$	$\begin{array}{r} 13 \\ \hline 15 \end{array}$
2. From	11	12	15	16	18
Take	$\begin{array}{r} 3 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \hline \end{array}$
3. Add	$\begin{array}{r} 13 \\ \hline 18 \end{array}$	$\begin{array}{r} 23 \\ \hline 28 \end{array}$	$\begin{array}{r} 33 \\ \hline 48 \end{array}$	$\begin{array}{r} 23 \\ \hline 37 \end{array}$	$\begin{array}{r} 33 \\ \hline 57 \end{array}$

Copy and add: —

Copy and read: —

4.	5.	6.	7.	8.	9.	10.	11.
$\begin{array}{r} 3 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \hline \end{array}$	100	110	140
$\begin{array}{r} 3 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \hline \end{array}$	101	111	150
$\begin{array}{r} 3 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \hline \end{array}$	102	112	152
$\begin{array}{r} 3 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \hline \end{array}$	103	113	154
$\begin{array}{r} 3 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \hline \end{array}$	104	114	160
$\begin{array}{r} 3 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \hline \end{array}$	105	115	166
$\begin{array}{r} 3 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \hline \end{array}$	106	116	168
$\begin{array}{r} 3 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \hline \end{array}$	107	117	170
$\begin{array}{r} 3 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \hline \end{array}$	108	118	173
$\begin{array}{r} 3 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \hline \end{array}$	109	119	175
$\begin{array}{r} 3 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \hline \end{array}$	110	120	177