IMAGE EVALUATION
TEST TARGET (MT-3)

6"
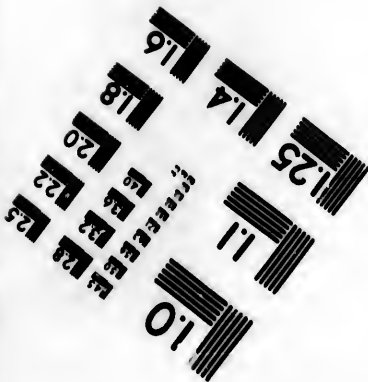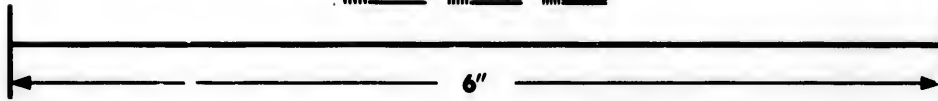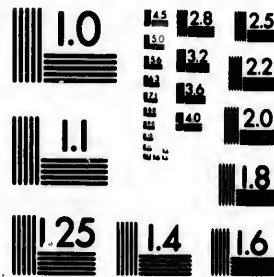
Photographic
Sciences
Corporation

CIHM/ICMH Microfiche Series.

CIHM/ICMH Collection de microfiches.

© 1984

The copy filmed here has been reproduced thanks to the generosity of:

Seminary of Quebec
Library

The images appearing here are the best quality possible considering the condition and legibility of the original copy and in keeping with the filming contract specifications.

Original copies in printed paper covers are filmed beginning with the front cover and ending on the last page with a printed or illustrated impression, or the back cover when appropriate. All other original copies are filmed beginning on the first page with a printed or illustrated impression, and ending on the last page with a printed or illustrated impression.

The last recorded frame on each microfiche shall contain the symbol ➔ (meaning "CONTINUED"), or the symbol ▽ (meaning "END"), whichever applies.

Maps, plates, charts, etc., may be filmed at different reduction ratios. Those too large to be entirely included in one exposure are filmed beginning in the upper left hand corner, left to right and top to bottom, as many frames as required. The following diagrams illustrate the method:
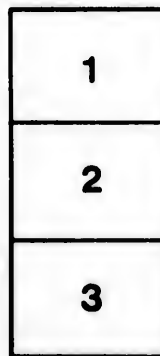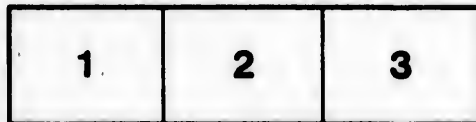
L'exemplaire filmé fut reproduit grâce à la générosité de:

Séminaire de Québec
Bibliothèque

Les images suivantes ont été reproduites avec le plus grand soin, compte tenu de la condition et de la netteté de l'exemplaire filmé, et en conformité avec les conditions du contrat de filmage.

Les exemplaires originaux dont la couverture en papier est imprimée sont filmés en commençant par le premier plat et en terminant soit par la dernière page qui comporte une empreinte d'impression ou d'illustration, soit par le second plat, selon le cas. Tous les autres exemplaires originaux sont filmés en commençant par la première page qui comporte une empreinte d'impression ou d'illustration et en terminant par la dernière page qui comporte une telle empreinte.

Un des symboles suivants apparaîtra sur la dernière image de chaque microfiche, selon le cas: le symbole ➔ signifie "A SUIVRE", le symbole ▽ signifie "FIN".

Les cartes, planches, tableaux, etc., peuvent être filmés à des taux de réduction différents. Lorsque le document est trop grand pour être reproduit en un seul cliché, il est filmé à partir de l'angle supérieur gauche, de gauche à droite, et de haut en bas, en prenant le nombre d'images nécessaire. Les diagrammes suivants illustrent la méthode.

1	2	3

1
2
3

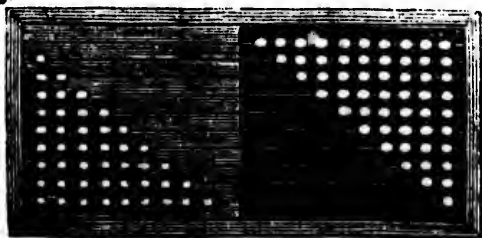| 1	2	3
4	5	6

THE

BRITISH NORTH AMERICAN

ARITHMETIC,

CONTAINING

ELEMENTARY LESSONS

FOR THE YOUNGER CLASSES IN COMMON SCHOOLS.

PREPARED EXPRESSLY FOR THE BRITISH PROVINCES.

BY A TEACHER.

STANSTEAD, L. C.
1833.

PREFACE.

IN a systematic course of general education, Arithmetic claims a place among the primary objects. Its elementary exercises, when rationally conducted, are adapted to the capacities of children at a very early age. Its influence on the character of children, in developing the reasoning faculties, and habituating the mind to investigation, is highly conducive to progress in every other branch of knowledge. Notwithstanding the obvious truth of the above remark, the practice of postponing Arithmetic till pupils arrive at the age of *nine* or *ten* years, still prevails to a very great extent, and calls for the attention of those, to whom the concerns of popular education are intrusted.

The purpose of this Manual is, to facilitate the instruction of the younger classes in common schools.

The plan of the lessons accords with the method of instruction practiced in the school at Stantz, by the celebrated Pestalozzi. The method of illustration, by the use of cuts, and the location of unit marks under questions, it is hoped will be found to be an improvement.

The work has been confined to the simple elements of arithmetic, with a view of rendering it a suitable introduction to the subsequent study of the science from books, which are already in use, and which are thought to be deficient in elementary exercises.

The slate and pencil are not required, in the performance of the lessons. On the title page, will be seen, a drawing of an improved structure of the *Abacus*. It is a convenient apparatus for illustrating the combinations of numbers, and may be used in connexion with these lessons, although it is not indispensable.

F. E.

PUBLISHER'S PREFACE.

The public generally, and school teachers in particular, have long felt the need of using books prepared particularly for our own schools, instead of those written for the United States, or for foreign countries. In the present work, this difficulty is obviated by the language being adapted to the currency of Canada.

It has been prepared and stereotyped at considerable expense, and the publishers are confident that its merits will ensure it a cordial reception by parents and teachers.

ARITHMETIC.

NUMERATION.

Note to Teachers. All the lessons in Numeration, are designed to be performed while the learners have their books open.

LESSON I.

Here is the picture of some apples: count them.

One,　two,　three,　four,　five,　six,　seven,　eight,　nine,　ten.

LESSON II.

Count the stars in each line across this page.

✳

✳ ✳

✳ ✳ ✳

✳ ✳ ✳ ✳

✳ ✳ ✳ ✳ ✳

✳ ✳ ✳ ✳ ✳ ✳

✳ ✳ ✳ ✳ ✳ ✳ ✳

✳ ✳ ✳ ✳ ✳ ✳ ✳ ✳

✳ ✳ ✳ ✳ ✳ ✳ ✳ ✳ ✳

✳ ✳ ✳ ✳ ✳ ✳ ✳ ✳ ✳ ✳
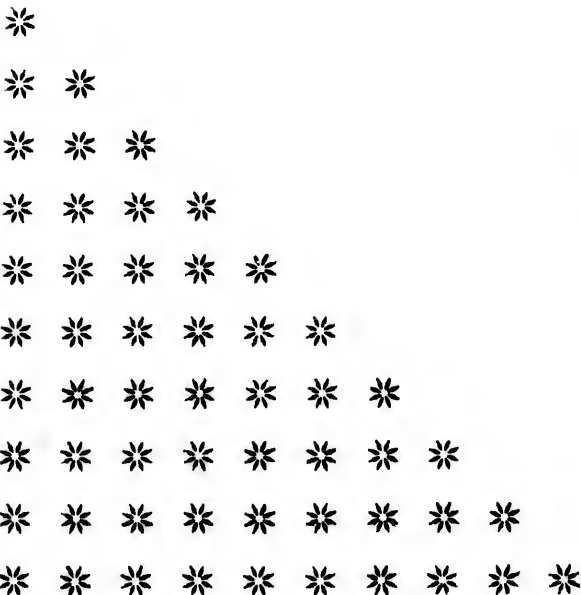
LESSON III.

How many stars are one star and one star?

✳　　　　✳

How many stars are two stars and one star?

✳　✳　　　✳

How many stars are three stars and one star?

✳　✳　✳　　　✳

How many stars are four stars and one star?

✳　✳　✳　✳　　　✳

How many stars are five stars and one star?

✳　✳　✳　✳　✳　　　✳

How many stars are six stars and one star?

✳　✳　✳　✳　✳　✳　　　✳

How many stars are seven stars and one star?

✳　✳　✳　✳　✳　✳　✳　　　✳

How many stars are eight stars and one star?

✳　✳　✳　✳　✳　✳　✳　✳　　　✳

How many stars are nine stars and one star?

✳　✳　✳　✳　✳　✳　✳　✳　✳　　　✳

Note to Teachers. The design of the preceding lessons has been, to teach the names, and the comparative magnitude of numbers, from *one* to *ten*. The teacher should now inform the pupils, that numbers are represented by FIGURES. He may direct them, to obtain the names of the figures by counting the unit marks, (from left to right,) which stand against the figures severally, in the following table. As this exercise will tend to fix a mental association of each figure with the number of units, which it represents, the lesson should not be omitted, even by children, who are already able to read figures.

LESSON IV.

| 1

| | 2

| | | 3

| | | | 4

| | | | | 5

| | | | | | 6

| | | | | | | 7

| | | | | | | | 8

| | | | | | | | | 9
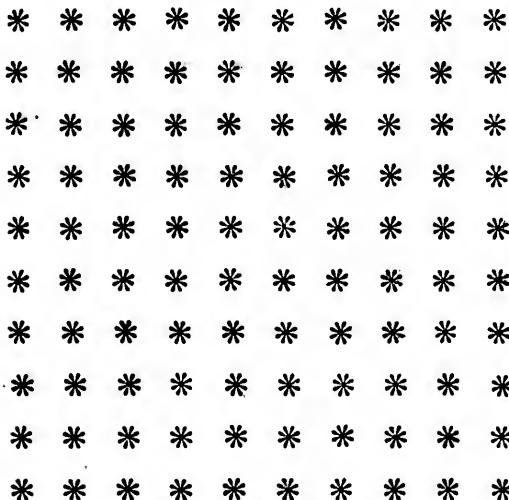
| | | | | | | | | | 10

A*

Note to Teachers. The purpose of the following lesson is, to teach *Counting,* and *Reading Figures,* as high as one hundred. It will easily be effected, by exercising the learners in reading the numbers, written in columns; and, at the same time, leading them to observe the analogies, *two—twenty; three—thirty; four—forty;* &c.

LESSON V.

1 One,	34 thirty-four,	67 sixty-seven,
2 two,	35 thirty-five,	68 sixty-eight,
3 three,	36 thirty-six,	69 sixty-nine,
4 four,	37 thirty-seven,	70 seventy,
5 five,	38 thirty-eight,	71 seventy-one,
6 six,	39 thirty-nine,	72 seventy-two,
7 seven,	40 forty,	73 seventy-three,
8 eight,	41 forty-one,	74 seventy-four,
9 nine,	42 forty-two,	75 seventy-five,
10 ten,	43 forty-three,	76 seventy-six,
11 eleven,	44 forty-four,	77 seventy-seven,
12 twelve,	45 forty-five,	78 seventy-eight,
13 thirteen,	46 forty-six,	79 seventy-nine,
14 fourteen,	47 forty-seven,	80 eighty,
15 fifteen,	48 forty-eight,	81 eighty-one,
16 sixteen,	49 forty-nine,	82 eighty-two,
17 seventeen,	50 fifty,	83 eighty-three,
18 eighteen,	51 fifty-one,	84 eighty-four,
19 nineteen,	52 fifty-two,	85 eighty-five,
20 twenty,	53 fifty-three,	86 eighty-six,
21 twenty-one,	54 fifty-four,	87 eighty-seven,
22 twenty-two,	55 fifty-five,	88 eighty-eight,
23 twenty-three,	56 fifty-six,	89 eighty-nine,
24 twenty-four,	57 fifty-seven,	90 ninety,
25 twenty-five,	58 fifty-eight,	91 ninety-one,
26 twenty-six,	59 fifty-nine,	92 ninety-two,
27 twenty-seven,	60 sixty,	93 ninety-three,
28 twenty-eight,	61 sixty-one,	94 ninety-four,
29 twenty-nine,	62 sixty-two,	95 ninety-five,
30 thirty,	63 sixty-three,	96 ninety-six,
31 thirty-one,	64 sixty-four,	97 ninety-seven,
32 thirty-two,	65 sixty-five,	98 ninety-eight,
33 thirty-three,	66 sixty-six,	99 ninety-nine,
		100 one hundred.

LESSON VI.

```
*  *  *  *  *  *  *  *  *  *

*  *  *  *  *  *  *  *  *  *

*  *  *  *  *  *  *  *  *  *

*  *  *  *  *  *  *  *  *  *

*  *  *  *  *  *  *  *  *  *

*  *  *  *  *  *  *  *  *  *

*  *  *  *  *  *  *  *  *  *

*  *  *  *  *  *  *  *  *  *

*  *  *  *  *  *  *  *  *  *

*  *  *  *  *  *  *  *  *  *
```

How many stars are there in the upper line, counted across the page, from left to right?

If you count the stars in the first and second line together, how many will they make?

In three lines, how many stars are there?
In four lines, how many stars are there?
In five lines, how many stars are there?
In six lines, how many stars are there?
In seven lines, how many stars are there?
In eight lines, how many stars are there?
In nine lines, how many stars are there?
In ten lines, how many stars are there?

What numbers are expressed by these figures?

30	50	20	60	40	80	70	90	10	100
32	51	24	63	45	89	77	98	16	99

ADDITION.

Note to Teachers. In all the following exercises, (until we arrive at Miscellaneous Examples, page 43,) the pupils must answer the questions, and recite the sections of the tables appended to the several lessons, with their books closed.

LESSON I.

How many trees are 1 tree and 2 trees?

Henry's sister gave him 1 apple, and his mother gave him 3 more. How many apples had Henry?
1 and 3 are how many?

James found 1 pear under the tree, and John gave him 4 more. How many had James then?
1 and 4 are how many?

Sarah's brother gave her one cherry, and her mother gave her 7 more. How many had Sarah then?
1 and 7 are how many?

To be committed to memory, and recited verbatim.

1 and 1 are 2	1 and 6 are 7
1 and 2 are 3	1 and 7 are 8
1 and 3 are 4	1 and 8 are 9
1 and 4 are 5	1 and 9 are 10
1 and 5 are 6	1 and 10 are 11

LESSON II.

2 houses are on one side of a street, and 2 on the other side. How many are there on both sides?

2 chairs are on one side of a room, and 4 on the other side. How many are there on both sides?
2 and 4 are how many?

Suppose 2 hats are in one place and 5 in another; how many will there be, if we put them together?
2 and 5 are how many?

There are 2 lamps on one side of a table, and 7 on the other side. How many lamps are there in all?
2 and 7 are how many?
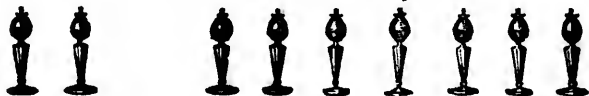
If 2 candles were burning on one table, and 10 on another, how many would there be on both?
2 and 10 are how many?

To be recited.

2 and 1 are 3	2 and 6 are 8
2 and 2 are 4	2 and 7 are 9
2 and 3 are 5	2 and 8 are 10
2 and 4 are 6	2 and 9 are 11
2 and 5 are 7	2 and 10 are 12

LESSON III.

3 birds are on one branch of a grape vine, and 2 on another branch. How many on both branches?
3 and 2 are how many?

3 boys are up to recite, and 3 others are coming to recite with them. How many will there be?

William owns 3 fish-hooks: if he should buy 6 more, how many would he then have?
3 and 6 are how many?

Jane put 3 pins into a cushion, and Lucy put in 9 more. How many were there in the cushion then?
3 and 9 are how many?

Andrew had 3 marbles, and, returning from school, he found 10 more. How many had he then?
3 and 10 are how many?

To be recited.

3 and 1 are 4		3 and 6 are 9
3 and 2 are 5		3 and 7 are 10
3 and 3 are 6		3 and 8 are 11
3 and 4 are 7		3 and 9 are 12
3 and 5 are 8		3 and 10 are 13

LESSON IV.

If you had 4 pence in one pocket and 3 in the other,
how many pence would you have in both pockets?

4 and 3 are how many?

| | | | | | |

Joseph had 4 marbles, and his brother gave him 4
more. How many marbles had Joseph then?

| | | | | | | |

If you had 4 nuts in your pocket, and I should give
you 5 more, how many would you then have?

4 and 5 are how many?

| | | | | | | | |

Sophia put 4 pence into a charity fund, and Augus-
ta put in 7 pence. How many pence did both put in?

4 and 7 are how many?

| | | | | | | | | | |

If you had 4 pins on one sleeve, and 8 on the other,
how many pins would you have on both sleeves?

4 and 8 are how many?

| | | | | | | | | | | |

Samuel gave 4 pence for a picture, and 9 pence for a
book. How many pence did he give for both of them?

4 and 9 are how many?

| | | | | | | | | | | | |

To be recited.

4 and 1 are 5		4 and 6 are 10
4 and 2 are 6		4 and 7 are 11
4 and 3 are 7		4 and 8 are 12
4 and 4 are 8		4 and 9 are 13
4 and 5 are 9		4 and 10 are 14

LESSON V.

Daniel gave 5 pence for a bow, and 1 penny for an arrow. How many pence did both of them cost?

5 and 1 are how many?

| | | | | |

5 boys are on one end of a form, and 3 on the other end. How many boys are on the whole form?

5 and 3 are how many?

| | | | | | | |

Harriet owned 5 school-books and 5 story-books. How many books did Harriet own in all?

| | | | | | | | | |

Susan has 5 plums, and George has 7. If George give his to Susan, how many will she then have?

5 and 7 are how many?

| | | | | | | | | | | |

5 boys are playing at foot-ball on one side, and 8 on the other side. How many boys on both sides?

5 and 8 are how many?

| | | | | | | | | | | | |

How many pence would it take to buy two picture-books, if one cost 5 pence and the other 9 pence?

5 and 9 are how many?

| | | | | | | | | | | | | |

If an orange cost 5 pence, and a book 10 pence, how many pence will it take to buy both of them?

5 and 10 are how many?

| | | | | | | | | | | | | | |

To be recited.

5 and 1 are 6	‖	5 and 6 are 11
5 and 2 are 7	‖	5 and 7 are 12
5 and 3 are 8	‖	5 and 8 are 13
5 and 4 are 9	‖	5 and 9 are 14
5 and 5 are 10	‖	5 and 10 are 15

LESSON VI.

If I put 6 books down in   pile, and you put on 4 more, how many books will there be in the pile?

| | | | | | | | | |

6 books and 5 books, would be how many books?

| | | | | | | | | | |

How many bonnets are 6 bonnets and 6 bonnets?

| | | | | | | | | | | |

6 hats and 9 hats together, are how many hats?

| | | | | | | | | | | | | | |

To be recited.

6 and 1 are 7	6 and 6 are 12
6 and 2 are 8	6 and 7 are 13
6 and 3 are 9	6 and 8 are 14
6 and 4 are 10	6 and 9 are 15
6 and 5 are 11	6 and 10 are 16

LESSON VII.

If I pull out 7 quills from a bunch, and then pull out 3 more, how many shall I have taken out?

| | | | | | | | | |

7 quills and 6 quills together, are how many quills?

| | | | | | | | | | | | |

How many hats are 7 hats and 7 hats together?

| | | | | | | | | | | | |

How many pencils are 7 pencils and 9 pencils?

| | | | | | | | | | | | | | |

To be recited.

7 and 1 are 8	7 and 6 are 13
7 and 2 are 9	7 and 7 are 14
7 and 3 are 10	7 and 8 are 15
7 and 4 are 11	7 and 9 are 16
7 and 5 are 12	7 and 10 are 17

B

LESSON VIII.

Richard has 8 chestnuts and David has only 2. How many will there be, if they put them together?

❚ ❚ ❚ ❚ ❚ ❚ ❚ ❚   ❚ ❚

How many apples are 8 apples and 3 apples?

❚ ❚ ❚ ❚ ❚ ❚ ❚ ❚   ❚ ❚ ❚

How many raisins are 8 raisins and 6 raisins?

❚ ❚ ❚ ❚ ❚ ❚ ❚ ❚   ❚ ❚ ❚ ❚ ❚ ❚

8 pins and 8 pins together, are how many pins?

❚ ❚ ❚ ❚ ❚ ❚ ❚ ❚   ❚ ❚ ❚ ❚ ❚ ❚ ❚ ❚

To be recited.

8 and 1 are 9		8 and 6 are 14
8 and 2 are 10		8 and 7 are 15
8 and 3 are 11		8 and 8 are 16
8 and 4 are 12		8 and 9 are 17
8 and 5 are 13		8 and 10 are 18

LESSON IX.

James has 9 buttons on the front of his jacket, and 2 on the back. How many has he on the jacket?

❚ ❚ ❚ ❚ ❚ ❚ ❚ ❚ ❚   ❚ ❚

How many buttons are 9 buttons and 8 buttons?

❚ ❚ ❚ ❚ ❚ ❚ ❚ ❚ ❚   ❚ ❚ ❚ ❚ ❚ ❚ ❚ ❚

How many pence are 9 pence and 9 pence?

❚ ❚ ❚ ❚ ❚ ❚ ❚ ❚ ❚   ❚ ❚ ❚ ❚ ❚ ❚ ❚ ❚ ❚

How many dollars are 9 dollars and 10 dollars?

❚ ❚ ❚ ❚ ❚ ❚ ❚ ❚ ❚   ❚ ❚ ❚ ❚ ❚ ❚ ❚ ❚ ❚ ❚

To be recited.

9 and 1 are 10		9 and 6 are 15
9 and 2 are 11		9 and 7 are 16
9 and 3 are 12		9 and 8 are 17
9 and 4 are 13		9 and 9 are 18
9 and 5 are 14		9 and 10 are 19

LESSON X.

If I should call 10 boys to the desk, and then should call 4 more, how many boys would be called?

| | | | | | | | | | | | |

10 boys and 6 boys, would be how many boys?

| | | | | | | | | | | | | | | |

How many houses, are 10 houses and 8 houses?

| | | | | | | | | | | | | | | | | |

How many men, are 10 men and 10 men together?

| | | | | | | | | | | | | | | | | | | |

To be recited.

10 and 1 are 11	10 and 6 are 16
10 and 2 are 12	10 and 7 are 17
10 and 3 are 13	10 and 8 are 18
10 and 4 are 14	10 and 9 are 19
10 and 5 are 15	10 and 10 are 20

Note to Teachers. I have attempted, in the preceding lessons, to present to the eye and mind of learners, a clear view of the union or *addition* of small numbers, in forming larger numbers. It now remains, to fix the sums of the several additions in the memory. For this purpose, the teacher may embrace each of the following combinations in two separate questions. For example, (Lesson XI, combination first,) *9 and 4 are how many ?*—Then, *4 and 9 are how many ?*

XI.	XII.	XIII.	XIV.
9 and 4	9 and 6	8 and 6	9 and 5
6 and 3	8 and 1	5 and 3	7 and 3
8 and 5	6 and 6	10 and 9	4 and 4
2 and 2	10 and 8	8 and 8	10 and 3
10 and 4	5 and 4	6 and 4	8 and 4
7 and 7	8 and 2	9 and 2	5 and 2
4 and 1	3 and 2	10 and 6	7 and 4
9 and 7	9 and 3	3 and 3	10 and 5
5 and 5	7 and 6	7 and 2	8 and 7
10 and 1	6 and 5	4 and 3	6 and 2
9 and 8	10 and 2	7 and 5	8 and 3
4 and 2	9 and 9	10 and 7	10 and 10

SUBTRACTION.

Note to Teachers. Children, who have learned addition, may easily be taught subtraction, by leading them to observe the correspondence of the two operations. Questions in addition, (distinguished by Italic print,) are therefore connected with the questions in subtraction.

The teacher must here inform the learners, that the *cipher*, (0) represents *nothing* of itself, being used only to occupy a place.

LESSON I.

There was 1 pitcher on the table, but a careless boy knocked it off. What is left on the table?

1, taken from where there was 1, leaves what?

2 trees stood near by, but the wind has blown 1 of them down. What number is left standing?

1, taken from 2, leaves what number?

3 chairs were standing in a row, but a child has thrown 1 of them down. How many are upright?

1 from 3 leaves how many?   *How many are 1 and 2?*

7 sugar loaves are on a shelf; one of them has the top broken off. How many of them are whole?

1 from 7 leaves how many?   *How many are 1 and 6?*

To be committed to memory, and recited verbatim.

1 from 1 leaves 0	1 from 6 leaves 5
1 from 2 leaves 1	1 from 7 leaves 6
1 from 3 leaves 2	1 from 8 leaves 7
1 from 4 leaves 3	1 from 9 leaves 8
1 from 5 leaves 4	1 from 10 leaves 9

LESSON II.

There are 3 pitchers, 2 of which have broken handles. What number of them is whole?

2 from 3 leaves what number? *How many are 2 and 1?*

5 boys came up to recite, but 2 of them were sent back, for having no lesson. How many recited?

2 from 5 leaves how many? *How many are 2 and 3?*

7 bottles were standing on a table, but 2 of them are turned down. How many are still upright?

2 from 7 leaves how many? *How many are 2 and 5?*

Edward has 9 lead pencils, and he has pointed 2 of them. How many has he, which are not pointed?

2 from 9 leaves how many? *How many are 2 and 7?*

Harriet has 11 pins, but 2 of them have lost their heads. How many have their heads on?

2 from 11 leaves how many? *How many are 2 and 9?*

To be recited.

2 from 2 leaves 0		2 from 7 leaves 5
2 from 3 leaves 1		2 from 8 leaves 6
2 from 4 leaves 2		2 from 9 leaves 7
2 from 5 leaves 3		2 from 10 leaves 8
2 from 6 leaves 4		2 from 11 leaves 9

B*

LESSON III

In a certain fold there are 5 sheep; 3 of them have lain down to rest.   How many are standing?
3 from 5 leaves how many?   *How many are 3 and 2?*

6 hens were in a farm yard, and a boy frightened 3 of them away.   How many of them remained?
3 from 6 leaves how many?   *How many are 3 and 3?*

Robert has 12 quills; 3 of them have the tops cut off, and the others are whole.   How many are whole?
3 from 12 leaves how many?   *How many are 3 and 9?*

8 cups are on the table, and 3 of them are bottom upward.   How many are right side up?
3 from 8 leaves how many?   *How many are 3 and 5?*

10 wine glasses are on a waiter, 3 of which are bottom upward.   How many are right side up?
3 from 10 leaves how many?   *How many are 3 and 7?*

To be recited.

3 from 3 leaves 0	3 from 8 leaves 5
3 from 4 leaves 1	3 from 9 leaves 6
3 from 5 leaves 2	3 from 10 leaves 7
3 from 6 leaves 3	3 from 11 leaves 8
3 from 7 leaves 4	3 from 12 leaves 9

Note to Teachers. The pupils must be informed, that the unit marks, which are inclined, represent the number to be subtracted; and those which are upright, show the number that will be left.

LESSON IV.

10 boys were playing ball; 4 of them became tired, and went home. How many were left?

||||| ////

Thomas put 8 chestnuts into the embers to roast, and 4 of them were burnt. How many were saved?
4 from 8 leaves how many? *How many are 4 and 4?*

|||| ////

Charles had 12 marbles, but he gave his brother James 4 of them. How many had he left?
4 from 12 leaves how many? *How many are 4 and 8?*

|||||||| ////

Mary had 9 apples, and she roasted 4 of them for her sick father. How many had she left?
4 from 9 leaves how many? *How many are 4 and 5?*

|||| ////

7 bells were ringing last Sabbath; 4 of them ceased before the rest. How many continued ringing?
4 from 7 leaves how many? *How many are 4 and 3?*

||| ////

13 sheep were feeding in a pasture, and 4 of them had lambs. How many of them had no lambs?
4 from 13 leaves how many? *How many are 4 and 9?*

||||||||| ////

To be recited.

4 from 4 leaves 0		4 from 9 leaves 5
4 from 5 leaves 1		4 from 10 leaves 6
4 from 6 leaves 2		4 from 11 leaves 7
4 from 7 leaves 3		4 from 12 leaves 8
4 from 8 leaves 4		4 from 13 leaves 9

LESSON V.

6 scholars may hold up their right hands—now 5 may put them down—how many are still up?

5 from 6 leaves how many? *How many are 5 and 1?*

❙ / / / / /

James had a recess of 10 minutes, and stayed out only 5. How many more might he have stayed?

5 from 10 leaves how many? *How many are 5 and 5?*

❙ ❙ ❙ ❙ ❙ / / / / /

A good farmer had 13 cows, and all but 5 of them were red. How many of them were red?

5 from 13 leaves how many? *How many are 5 and 8?*

❙ ❙ ❙ ❙ ❙ ❙ ❙ ❙ / / / / /

Of 9 men that were in a stage-coach, 5 alighted before the end of the route. How many rode on?

5 from 9 leaves how many? *How many are 5 and 4?*

❙ ❙ ❙ ❙ / / / / /

A ship's crew consisted of 14 men, 5 of whom died while at sea. How many arrived safe in port?

5 from 14 leaves how many? *How many are 5 and 9?*

❙ ❙ ❙ ❙ ❙ ❙ ❙ ❙ ❙ / / / / /

Sarah had a party, to which she invited 11 young ladies; only 5 of them came. How many kept away?

5 from 11 leaves how many? *How many are 5 and 6?*

❙ ❙ ❙ ❙ ❙ ❙ / / / / /

A front yard had 8 elms standing in it; 5 of them are cut down. How many are yet standing?

5 from 8 leaves how many? *How many are 5 and 3?*

❙ ❙ ❙ / / / / /

To be recited.

5 from 5 leaves 0		5 from 10 leaves 5
5 from 6 leaves 1		5 from 11 leaves 6
5 from 7 leaves 2		5 from 12 leaves 7
5 from 8 leaves 3		5 from 13 leaves 8
5 from 9 leaves 4		5 from 14 leaves 9

LESSON VI.

9 doves were picking oats before the door, and a dog drove off 6 of them. How many remained?

▌▌▌ ⁄⁄⁄⁄⁄⁄

6 pence taken from 8 pence, leave how many?

▌▌ ⁄⁄⁄⁄⁄⁄

Ann had 14 pins, and lost 6. How many were left?

▌▌▌▌▌▌▌▌ ⁄⁄⁄⁄⁄⁄

Take 6 books from 12 books—how many remain?

▌▌▌▌▌▌ ⁄⁄⁄⁄⁄⁄

To be recited.

6 from	6 leaves 0		6 from	11 leaves 5
6 from	7 leaves 1		6 from	12 leaves 6
6 from	8 leaves 2		6 from	13 leaves 7
6 from	9 leaves 3		6 from	14 leaves 8
6 from	10 leaves 4		6 from	15 leaves 9

LESSON VII.

Henry's pear tree had 15 blossoms on it; 7 of them dropped off; the rest ripened. How many ripened?

▌▌▌▌▌▌▌▌ ⁄⁄⁄⁄⁄⁄⁄

7 pence taken from 11 pence, leave how many?

▌▌▌▌ ⁄⁄⁄⁄⁄⁄⁄

7 pence taken from 16 pence, leave how many?

▌▌▌▌▌▌▌▌▌ ⁄⁄⁄⁄⁄⁄⁄

Take 7 books from 12 books—how many remain?

▌▌▌▌▌ ⁄⁄⁄⁄⁄⁄⁄

To be recited.

7 from	7 leaves 0		7 from	12 leaves 5
7 from	8 leaves 1		7 from	13 leaves 6
7 from	9 leaves 2		7 from	14 leaves 7
7 from	10 leaves 3		7 from	15 leaves 8
7 from	11 leaves 4		7 from	16 leaves 9

LESSON VIII.

There are 14 lessons in subtraction; you have now
studied 8 of them.   How many remain to be studied?

| | | | | | / / / / / / /

8 hats taken from 12 hats, leave how many hats?

| | | | / / / / / / / /

Take 8 pins from 16 pins——how many remain?

| | | | | | | | / / / / / / / /

8 pins taken from 15 pins, leave how many pins?

| | | | | | | / / / / / / /

To be recited.

8 from 8 leaves 0	‖	8 from 13 leaves 5
8 from 9 leaves 1	‖	8 from 14 leaves 6
8 from 10 leaves 2	‖	8 from 15 leaves 7
8 from 11 leaves 3	‖	8 from 16 leaves 8
8 from 12 leaves 4	‖	8 from 17 leaves 9

LESSON IX.

Stephen purchased 16 quills, to use in writing:
after using 9 of them, how many had he left?

| | | | | | | / / / / / / / /

9 quills taken from 13 quills leave how many?

| | | | / / / / / / / /

Take 9 nuts from 17 nuts——how many remain?

| | | | | | | | / / / / / / / /

John had 18 quills and lost 9: how many remain?

| | | | | | | | | / / / / / / / /

To be recited.

9 from 9 leaves 0	‖	9 from 14 leaves 5
9 from 10 leaves 1	‖	9 from 15 leaves 6
9 from 11 leaves 2	‖	9 from 16 leaves 7
9 from 12 leaves 3	‖	9 from 17 leaves 8
9 from 13 leaves 4	‖	9 from 18 leaves 9

LESSON X.

Eliza has 14 books in her library, and she has read through 10 of them. How many has she yet to read?

| | | | / / / / / / / / / /

Take 10 books from 17 books—how many remain?

| | | | | | | / / / / / / / / / /

Take 10 pence from 16 pence—how many remain?

| | | | | | / / / / / / / / / /

Take 10 pence from 18 pence—how many remain?

| | | | | | | | / / / / / / / / / /

To be recited.

10 from 10 leaves 0	10 from 15 leaves 5
10 from 11 leaves 1	10 from 16 leaves 6
10 from 12 leaves 2	10 from 17 leaves 7
10 from 13 leaves 3	10 from 18 leaves 8
10 from 14 leaves 4	10 from 19 leaves 9

Note to Teachers. The following connexions of numbers may be embraced in questions by the teacher; thus,—3 from 4 leaves how many?

XI.	XII.	XIII.	XIV.
3 from 4	8 from 17	10 from 12	5 from 7
5 from 14	9 from 15	8 from 10	8 from 11
8 from 8	5 from 8	3 from 7	6 from 10
10 from 19	7 from 16	6 from 14	7 from 15
7 from 8	6 from 11	2 from 9	5 from 9
2 from 11	2 from 8	7 from 13	9 from 12
9 from 18	10 from 14	9 from 17	6 from 13
4 from 13	8 from 13	4 from 6	7 from 11
2 from 3	6 from 9	7 from 14	10 from 16
9 from 11	1 from 10	3 from 11	4 from 12
4 from 8	9 from 13	4 from 12	3 from 6
3 from 12	2 from 6	2 from 5	5 from 13
4 from 9	5 from 10	4 from 11	8 from 16
3 from 10	8 from 14	9 from 16	3 from 8
5 from 12	7 from 12	3 from 9	6 from 15
7 from 9	1 from 3	6 from 12	9 from 14

MULTIPLICATION.

LESSON I.

On Monday morning, Andrew's father told him, that he would give him one new book for every time he recited correctly, during the week.   On Saturday it appeared, that he had recited correctly only *once*.   What number of books did he receive?

Once 1 is what number?

Charles caught 1 fish, every time he went out to angle.   How many did he catch in going 2 times?

2 times 1 are how many?

A young cooper worked three days, and made 1 barrel each day.   How many barrels did he make?

3 times 1 are how many?

Stephen lost 1 ball, every time he went upon the common.   How many did he lose in going 4 times?

4 times 1 are how many?

To be committed to memory, and recited verbatim.

|					
Once 1 is	1		6 times 1 are	6
2 times 1 are	2		7 times 1 are	7
3 times 1 are	3		8 times 1 are	8
4 times 1 are	4		9 times 1 are	9
5 times 1 are	5		10 times 1 are	10

LESSON II.

A boy has 2 hands : how many hands have 2 boys?
2 times 2 are how many?

A rabbit has 2 ears : how many ears have 3 rabbits?
3 times 2 are how many?

James caught 2 fishes, every time he went fishing.
How many did he catch, in going 4 times?
4 times 2 are how many?
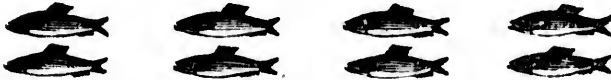
A clerk lost 2 keys, every time he went to the
theatre.   How many did he lose, in going 5 times?
5 times 2 are how many?

Harriet lost 2 pins every time she went to school.
How many did she lose, in going 7 times?
7 times 2 are how many?

To be recited.

Once 2 is	2			6 times 2 are	12
2 times 2 are	4			7 times 2 are	14
3 times 2 are	6			8 times 2 are	16
4 times 2 are	8			9 times 2 are	18
5 times 2 are	10			10 times 2 are	20

c

LESSON III.

When the sails of a ship are furled, her masts are distinctly seen. How many masts has 1 ship?

Once 3 is how many?

Since 1 ship has 3 masts, how many have 2 ships?

2 times 3 are how many?

Richard was learning to write, and he used 3 quills every week. How many did he use in 3 weeks?

3 times 3 are how many?

If 1 fork have 3 points, how many have 4 forks?

4 times 3 are how many?

We generally find 3 clover leaves, growing upon one stem. How many leaves grow upon 5 stems?

5 times 3 are how many?

To be recited.

Once 3 is	3		6 times 3 are	18
2 times 3 are	6		7 times 3 are	21
3 times 3 are	9		8 times 3 are	24
4 times 3 are	12		9 times 3 are	27
5 times 3 are	15		10 times 3 are	30

LESSON IV.

3 horses are trotting off without riders. Each horse has 4 feet : how many feet have they all?

3 times 4 are how many?

2 boys went a fishing, and each of them caught 4 trouts. How many trouts did they both catch?

2 times 4 are how many?

IIII IIII

A lady, who had 4 daughters, gave each of them 4 books. How many did she give them all?

4 times 4 are how many?

IIII IIII IIII IIII

6 chairs are standing in a row, and each chair has 4 legs. How many legs have all the chairs?

6 times 4 are how many?

IIII IIII IIII IIII IIII IIII

Lucy has 5 picture books, which cost 4 pence apiece. How many pence did they all cost?

5 times 4 are how many?

IIII IIII IIII IIII IIII

Susan gets 4 merit-marks, every time she recites. How many does she get, in reciting 7 times?

7 times 4 are how many?

* 4   4   4   4   4   4   4

To be recited.

Once 4 is 4	6 times 4 are 24
2 times 4 are 8	7 times 4 are 28
3 times 4 are 12	8 times 4 are 32
4 times 4 are 16	9 times 4 are 36
5 times 4 are 20	10 times 4 are 40

*The learners may be instructed to select any four marks above, and count them as many times as there are *fours* in the line of figures.

LESSON V.

4 houses are situated so that each house presents 5 windows. How many do they all present?

4 times 5 are how many?

A ship-master gave to 2 little boys, 5 oranges apiece. How many oranges did he give to both?

2 times 5 are how many?

||||| |||||

Mary reads 5 pages of history every morning. How many pages does she read in 3 mornings?

3 times 5 are how many?

||||| ||||| |||||

If I pay 5 pence for riding over the bridge once, how many must I pay for riding over 5 times?

5 times 5 are how many?

||||| ||||| ||||| ||||| |||||

If a pupil get 5 merit-tickets for every week of perfect lessons, how many can he get in 6 weeks?

6 times 5 are how many?

5   5   5   5   5   5

Stephen performs 5 lessons every day. How many lessons does he perform in 8 days?

8 times 5 are how many?

5   5   5   5   5   5   5   5

To be recited.

Once 5 is 5	6 times 5 are 30
2 times 5 are 10	7 times 5 are 35
3 times 5 are 15	8 times 5 are 40
4 times 5 are 20	9 times 5 are 45
5 times 5 are 25	10 times 5 are 50

LESSON VI.

If there be 6 rounds in one ladder, how many rounds are there in 5 ladders of the same length?

5 times 6 are how many?

If a hymn consist of 3 stanzas, and each stanza of 6 lines, how many lines are there in the hymn?

3 times 6 are how many?

|||||| |||||| ||||||

4 men went out in a hunting party, and each man had 6 hounds. How many had they all?

4 times 6 are how many?

|||||| |||||| |||||| ||||||

If a carpenter put 6 panels into one door, how many panels does he put into 6 doors?

6 times 6 are how many?

6   6   6   6   6   6

I have only 6 sheep, and my neighbour has 8 times as many. How many has my neighbour?

8 times 6 are how many?

6   6   6   6   6   6   6   6

James has 7 books, and every book has 6 pictures in it. How many pictures are there in all?

7 times 6 are how many?

6   6   6   6   6   6   6

To be recited.

Once 6 is	6	6 times 6 are 36
2 times 6 are	12	7 times 6 are 42
3 times 6 are	18	8 times 6 are 48
4 times 6 are	24	9 times 6 are 54
5 times 6 are	30	10 times 6 are 60

c *

LESSON VII.

If 1 hair-comb have 7 teeth in it, how many teeth have 3 hair-combs of the same size?

3 times 7 are how many?

If 4 boys stand up to read, and each boy read 7 lines, how many lines will they all read?

4 times 7 are how many?

If you had 7 marbles in each of your 2 hands, how many marbles would you have in all?

2 times 7 are how many?

If I give you some raisins 7 times, giving you 7 raisins each time, how many will you have?

7 times 7 are how many?

7   7   7   7   7   7   7

If you should buy 6 oranges, and pay 7 pence apiece for them, what would the whole cost?

6 times 7 are how many?

7   7   7   7   7   7

If I pay 7 pence for one lead pencil, how many pence must I have, to pay for 8 lead pencils?

8 times 7 are how many?
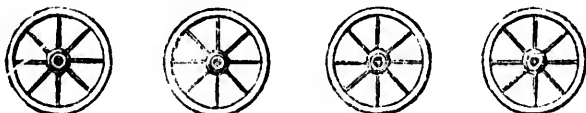
7   7   7   7   7   7   7   7

To be recited.

Once 7 is 7	6 times 7 are 42
2 times 7 are 14	7 times 7 are 49
3 times 7 are 21	8 times 7 are 56
4 times 7 are 28	9 times 7 are 63
5 times 7 are 35	10 times 7 are 70

LESSON VIII.

4 wheels are on an engine, and each wheel has 8 spokes. How many spokes in all the wheels?

4 times 8 are how many?

2 wagons went to market, carrying 8 barrels of cider apiece. How many did they both carry?

2 times 8 are how many?

‖‖‖‖‖‖‖ ‖‖‖‖‖‖‖

If there be 8 leaves in one writing-book, how many leaves will there be in 3 writing-books?

3 times 8 are how many?

‖‖‖‖‖‖‖ ‖‖‖‖‖‖‖ ‖‖‖‖‖‖‖

A fishing party went out in 7 boats, and each boat carried 8 persons. How many went in the party?

7 times 8 are how many?

8   8   8   8   8   8   8

If 8 pence be paid for one writing-book, how many pence must be paid for 6 writing-books?

6 times 8 are how many?

8   8   8   8   8   8

Henry was 8 weeks in this book, but Harry Sloth was 5 times as long. How long was Harry?

5 times 8 are how many?

8   8   8   8   8

To be recited.

Once 8 is	8	6 times 8 are	48
2 times 8 are	16	7 times 8 are	56
3 times 8 are	24	8 times 8 are	64
4 times 8 are	32	9 times 8 are	72
5 times 8 are	40	10 times 8 are	80

LESSON IX.

Edward has 2 jackets, and on each jacket there are 9 buttons. How many buttons are on both?

||||||||| |||||||||

How many quills have 3 boys; each boy having 9?

||||||||| ||||||||| |||||||||

If one book cost 9 pence, what will 6 books cost?

9   9   9   9   9   9

If one book cost 9 pence, what will 8 books cost?

9   9   9   9   9   9   9   9

To be recited.

Once 9 is	9		6 times 9 are	54
2 times 9 are	18		7 times 9 are	63
3 times 9 are	27		8 times 9 are	72
4 times 9 are	36		9 times 9 are	81
5 times 9 are	45		10 times 9 are	90

LESSON X.

If you take 10 steps in crossing the room once, how many would you take in crossing 3 times?

||||||||| ||||||||| |||||||||

How many teeth in 6 rakes; each rake having 10?

10   10   10   10   10   10

What cost 8 books, at 10 pence for each book?

10   10   10   10   10   10   10   10

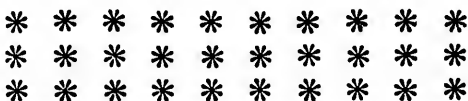What cost 7 books, at 10 pence for each book?

10   10   10   10   10   10   10

To be recited.

Once 10 is	10		6 times 10 are	60
2 times 10 are	20		7 times 10 are	70
3 times 10 are	30		8 times 10 are	80
4 times 10 are	40		9 times 10 are	90
5 times 10 are	50		10 times 10 are	100

LESSON XI.

Joseph made a number of stars upon his slate, arranging them in such order, that they appeared in rows two ways. Viewing them one way, there were 3 rows of ten stars each—thus, there were 3 times 10 stars. Viewing them the other way, there were 10 rows of 3 stars each—thus, there were 10 times 3 stars. How many stars did he make?

$$\ast \; \ast \; \ast \; \ast \; \ast \; \ast \; \ast \; \ast \; \ast \; \ast$$
$$\ast \; \ast \; \ast \; \ast \; \ast \; \ast \; \ast \; \ast \; \ast \; \ast$$
$$\ast \; \ast \; \ast \; \ast \; \ast \; \ast \; \ast \; \ast \; \ast \; \ast$$

John and Ezra compared their marbles as follows. John placed his, 5 in a row, and had enough to make 4 rows. Ezra placed his, 4 in a row, and had enough to make 5 rows. How many had each boy?
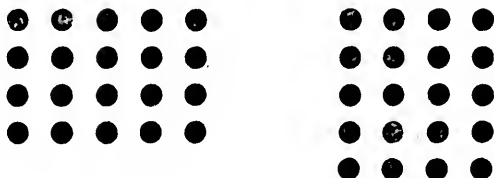
Note to Teachers. Embrace the following combinations in questions, thus,—3 times 6 are how many?—6 times 3 are how many?

Embraced in Lesson XI.	XII.	XIII.	XIV.
3 times 6	1 time 8	3 times 5	3 times 7
5 times 8	6 times 6	9 times 10	4 times 4
2 times 2	8 times 10	8 times 8	3 times 10
4 times 10	4 times 5	4 times 6	4 times 8
7 times 7	2 times 8	2 times 9	2 times 5
1 time 4	2 times 3	6 times 10	4 times 7
7 times 9	3 times 9	3 times 3	5 times 10
5 times 5	6 times 7	2 times 7	7 times 8
1 time 10	5 times 6	3 times 4	2 times 6
8 times 9	2 times 10	5 times 7	3 times 8
2 times 4	9 times 9	7 times 10	10 times 10

DIVISION.

Note to Teachers. The correspondence of Division and Multiplication, if not discovered by the pupils, should be pointed out to them.

LESSON I.

When Alfred was sick one of his school-mates brought him 8 grapes; but his physician said, he must eat only one at a time. How many times could he have 1 grape, before they would all be gone?

How many times 1 are there in 8?

| | | | | | | |

If I pay one penny for every time I walk over the bridge, how many times can I go over for 4 pence?

How many times 1 are there in 4?

| | | |

A certain farmer has 6 oxen, and it takes 2 of them to make one pair. How many pairs of oxen has he?

How many *twos* are there in 6?

U U U

John can carry 2 sticks of wood at once; and he has 8 sticks to carry off. How many times must he go?

How many times 2 are there in 8?

U U U U

My purse contains 16 pence. Large quills are 2 pence apiece; so I can buy one quill for every 2 pence in the purse. How many can I buy?

How many times 2 are there in 16?

U U U U U U U U

To be committed to memory, and recited verbatim.

2 in 2, once		2 in 12, 6 times
2 in 4, 2 times		2 in 14, 7 times
2 in 6, 3 times		2 in 16, 8 times
2 in 8, 4 times		2 in 18, 9 times
2 in 10, 5 times		2 in 20, 10 times

LESSON II.

If 12 pence were upon the desk, and I should begin taking them off, three at a time, how many times might I take off 3, before they would all be off?

How many *threes* are there in 12?

David had 18 sticks of wood to carry up stairs, and he could carry only 3 at a time. How many times had he to go, in order to carry up the whole?

How many times 3 are there in 18?

A sportsman shot 3 plovers every time he fired. How many times must he fire, to shoot 15 plovers?

How many times 3 in 15? *How many are 5 times 3?*

Jane gets 3 merit-marks for every perfect lesson. How many lessons must she recite, to get 21 marks?

How many times 3 in 21? *How many are 7 times 3?*

If 3 books be required to supply one scholar, how many scholars may be supplied from 9 books?

How many times 3 in 9? *How many are 3 times 3?*

Francis has 24 pence, with which he is going to buy oranges, at 3 pence apiece. How many can he buy?

How many times 3 in 24? *How many are 8 times 3?*

To be recited.

3 in 3,	once	3 in 18,	6 times
3 in 6,	2 times	3 in 21,	7 times
3 in 9,	3 times	3 in 24,	8 times
3 in 12,	4 times	3 in 27,	9 times
3 in 15,	5 times	3 in 30,	10 times

LESSON III.

If 4 horses be required to draw one stage-coach,
how many stage-coaches might 12 horses draw?

l l l J l l l J l l l J

How many times 4 pages, in a book of 24 pages?

l l l J l l l J l l l J l l l J l l l J l l l J

How many times 4 pages, in a book of 16 pages?

l l l J l l l J l l l J l l l J

How many times 4 pages, in a book of 20 pages?

l l l J l l l J l l l J l l l J l l l J

To be recited.

4 in 4, once		4 in 24, 6 times
4 in 8, 2 times		4 in 28, 7 times
4 in 12, 3 times		4 in 32, 8 times
4 in 16, 4 times		4 in 36, 9 times
4 in 20, 5 times		4 in 40, 10 times

LESSON IV.

If you write 5 lines in a writing-book, every day,
how many days would it take to write 20 lines?

l l l l J l l l l J l l l l J l l l l J

In a row of 10 seats, how many times 5 seats?

l l l l J l l l l J
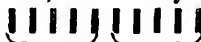
In a row of 15 seats, how many times 5 seats?

l l l l J l l l l J l l l l J

In a row of 25 seats, how many times 5 seats?

l l l l J l l l l J l l l l J l l l l J l l l l J

To be recited.

5 in 5, once		5 in 30, 6 times
5 in 10, 2 times		5 in 35, 7 times
5 in 15, 3 times		5 in 40, 8 times
5 in 20, 4 times		5 in 45, 9 times
5 in 25, 5 times		5 in 50, 10 times

LESSON V.

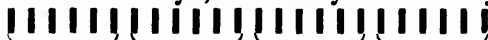18 boys were in a rank, and were asked, how many times 6 boys there were? You may tell.

|||||||||||||||||||

In a rank of 12 boys, how many times 6 boys?

|||||||||||||

In a rank of 30 boys, how many times 6 boys?

||||||||||||||||||||||||||||||

In a rank of 24 boys, how many times 6 boys?

||||||||||||||||||||||||

To be recited.

6 in 6, once		6 in 36,	6 times
6 in 12, 2 times		6 in 42,	7 times
6 in 18, 3 times		6 in 48,	8 times
6 in 24, 4 times		6 in 54,	9 times
6 in 30, 5 times		6 in 60,	10 times

LESSON VI.

The first class, in a certain school, consists of 28 girls. How many times 7 girls are in the class?

||||||||||||||||||||||||||||
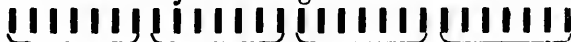
How many times 7 girls, in a class of 21 girls?

|||||||||||||||||||||
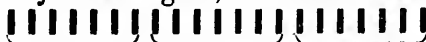
How many times 7 girls, in a class of 42 girls?

7   7   7   7   7   7

How many times 7 girls, in a class of 56 girls?

7   7   7   7   7   7   7   7

To be recited.

7 in 7, once		7 in 42,	6 times
7 in 14, 2 times		7 in 49,	7 times
7 in 21, 3 times		7 in 56,	8 times
7 in 28, 4 times		7 in 63,	9 times
7 in 35, 5 times		7 in 70,	10 times

D

LESSON VII.

Emeline's picture-book consists of 32 leaves. How many times 8 leaves are contained in the book?

⌣‖‖‖‖‖‖‖⌣ ⌣‖‖‖‖‖‖‖⌣ ⌣‖‖‖‖‖‖‖⌣ ⌣‖‖‖‖‖‖‖⌣

In a book of 24 leaves, how many times 8 leaves?

⌣‖‖‖‖‖‖‖⌣ ⌣‖‖‖‖‖‖‖⌣ ⌣‖‖‖‖‖‖‖⌣

In a book of 48 leaves, how many times 8 leaves?

8   8   8   8   8   8

In a book of 64 leaves, how many times 8 leaves?

8   8   8   8   8   8   8   8

To be recited.

8 in 8, once	8 in 48, 6 times
8 in 16, 2 times	8 in 56, 7 times
8 in 24, 3 times	8 in 64, 8 times
8 in 32, 4 times	8 in 72, 9 times
8 in 40, 5 times	8 in 80, 10 times

LESSON VIII.

There is a school of 27 boys, and 9 boys are in each of the classes. How many classes are there?

⌣‖‖‖‖‖‖‖‖‖⌣ ⌣‖‖‖‖‖‖‖‖‖⌣ ⌣‖‖‖‖‖‖‖‖‖⌣

In a school of 45 boys, how many times 9 boys?

9   9   9   9   9

In a school of 63 boys, how many times 9 boys?

9   9   9   9   9   9   9

In a school of 81 boys, how many times 9 boys?

9   9   9   9   9   9   9   9   9

To be recited.

9 in 9, once	9 in 54, 6 times
9 in 18, 2 times	9 in 63, 7 times
9 in 27, 3 times	9 in 72, 8 times
9 in 36, 4 times	9 in 81, 9 times
9 in 45, 5 times	9 in 90, 10 times

LESSON IX.

A farmer, who keeps a flock of 30 sheep, has a separate fold for every 10. How many folds has he?

IIIIIIIIIJ IIIIIIIIIJ IIIIIIIIIJ

How many times 10 sheep, in a flock of 50 sheep?

10 10 10 10 10

How many times 10 sheep, in a flock of 40 sheep?

10 10 10 10

How many times 10 sheep, in a flock of 70 sheep?

10 10 10 10 10 10 10

To be recited.

10 in 10,	once	10 in 60,	6 times
10 in 20,	2 times	10 in 70,	7 times
10 in 30,	3 times	10 in 80,	8 times
10 in 40,	4 times	10 in 90,	9 times
10 in 50,	5 times	10 in 100,	10 times

Note to Teachers. The following numbers may be embraced in separate questions, thus—How many times 4 are there in 36?

X.	XI.	XII.	XIII.
4 in 36	2 in 16	5 in 35	9 in 72
3 in 18	2 in 6	7 in 70	9 in 54
5 in 40	3 in 27	5 in 45	10 in 80
2 in 4	6 in 42	3 in 21	9 in 27
4 in 40	5 in 30	4 in 16	7 in 42
7 in 49	2 in 20	3 in 30	8 in 48
1 in 4	9 in 81	4 in 32	9 in 18
7 in 63	6 in 48	2 in 10	10 in 60
5 in 25	3 in 15	4 in 28	7 in 14
1 in 10	9 in 90	5 in 50	7 in 35
8 in 72	8 in 64	7 in 56	9 in 45
2 in 8	4 in 24	2 in 18	7 in 21
6 in 54	2 in 18	3 in 24	8 in 32
1 in 8	6 in 60	10 in 70	7 in 28
6 in 36	3 in 9	9 in 36	10 in 50
8 in 80	2 in 14	6 in 18	8 in 56
4 in 20	3 in 12	9 in 63	10 in 100

Note to Teachers. It will be perceived, that, in the preceding examples, Division has been viewed in only one of its purposes—that of investigating the number of times a small number is contained in a larger. We have now to pursue the same process, for the purpose of dividing the larger number into as many equal parts, as there are units in the smaller number, and discovering the magnitude of one of the parts.

LESSON XIV.

James and Henry had six raisins, to divide between them. They said, 'We are 2 boys, and there are 6 raisins. Now if each of us take up *one* raisin, then *two* raisins will be taken up; therefore, we can each of us take up as many raisins, as there are *twos* in the six.' How many could each boy take up?'

When a number is divided into 2 equal parts, one of the parts is called, *one half* of the number. What is one half of 6?

Three boys, George, John and Thomas, found 6 marbles, and wished to share them equally. George said to the others, 'Here are 3 boys of us: let us find how many times 3 marbles there are, and then we can each of us take 1 marble from every 3 marbles.' How many marbles did each boy get?

When a number is divided into 3 equal parts, one of the parts is called, *one third* of the number. What is one third of 6?

4 little girls, who own eight books together, wish to divide their books, and take their shares. As many times as 4 is contained in 8, so many books must each girl have. How many must each girl have?

When a number is divided into 4 equal parts, one of the parts is called, *one fourth* of the number. What is one fourth of 8?

g exam-
investi-
er. We
he larger
number,

le be-
there
raisin,
ve can
re *twos*
?'

ts, one
What

ound 6
George
let us
d then
3 mar-

s, one
What

wish
ma-
must
ave?

one
What

LESSON XV.

What do we mean by *one half* of a number?

What do we mean by *one third* of a number?

What do we mean by *one fourth* of a number?

What is one half of 2 pence? One third of 3 pence? One fourth of 4? One fifth of 5? One sixth of 6? One seventh of 7? One eighth of 8? One ninth of 9? One tenth of 10?

5 boys had 20 marbles to share between them, and the oldest boy performed the division. He said, 'One boy must have one fifth of the marbles. One fifth of 5 is 1, and one fifth of 20 is as many times 1, as there are *fives* in 20.' To prove what he said, he placed the marbles in a row, and, after rolling out 1 from every 5 for himself, requested the other boys to roll out theirs. How many did each boy take?
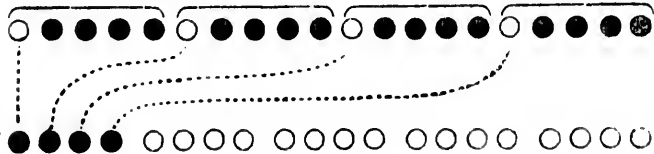
If 4 boys, who own 20 marbles together, take their separate shares, how many does each boy take?
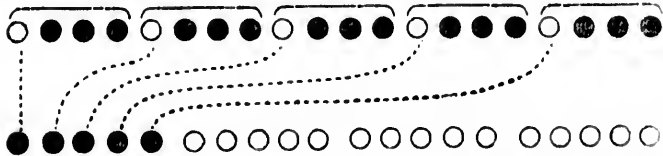
We have 18 books, to be placed in 6 equal piles. We first find how many times 6 books there are, and then take 1 book from every 6, to make a pile. How many books will there be in each pile?

D*

LESSON XVI.

I have 30 quills for 10 boys; each boy must have one tenth of them. How many must I give to 1 boy?

‖‖‖‖‖‖‖‖‖‖ ‖‖‖‖‖‖‖‖‖‖ ‖‖‖‖‖‖‖‖‖‖

30 roses were given to 3 girls; each girl received one third of them. How many did 1 girl receive?

‖‖ ‖‖ ‖‖ ‖‖ ‖‖ ‖‖ ‖‖ ‖‖ ‖‖ ‖‖ ‖‖ ‖‖ ‖‖ ‖‖ ‖‖

If 28 pence be required for 4 story books, how many pence would 1 book cost, at the same rate?

‖‖‖ ‖‖‖ ‖‖‖ ‖‖‖ ‖‖‖ ‖‖‖ ‖‖‖

32 chestnuts were roasting, which 4 boys owned in equal shares. How many belong to each boy?

‖‖‖ ‖‖‖ ‖‖‖ ‖‖‖ ‖‖‖ ‖‖‖ ‖‖‖ ‖‖‖

5 *is contained in* 20, *how many times?* Then one fifth of 20 is what? One fourth of 20 is what?

10 *is contained in* 30, *how many times?* Then one tenth of 30 is what? One third of 30 is what?

6 *is contained in* 24, *how many times?* Then one sixth of 24 is what? One fourth of 24 is what?

3 *is contained in* 6, *how many times?* Then one third of 6 is what? One half of 6 is what?

8 *is contained in* 16, *how many times?* Then one eighth of 16 is what? One half of 16 is what?

4 *is contained in* 12, *how many times?* Then one fourth of 12 is what? One third of 12 is what?

10 *is contained in* 90, *how many times?* Then one tenth of 90 is what? One ninth of 90 is what?

5 *is contained in* 15, *how many times?* Then one fifth of 15 is what? One third of 15 is what?

MISCELLANEOUS EXAMPLES.

Note to Teachers. Scholars will be found able, at this period of the course, to perform all the simple operations, which do not imply the combination of numbers higher than 10. Further practice, however, will be requisite, to enable them to determine the operations proper to be adopted in promiscuous questions.

The books may be open during the recitation of all the succeeding lessons, and the questions may be read either by the scholars or the teacher. The scholars should perform the operations audibly, and give their own reasons for the process they adopt. It is essential, that the pupils' own apprehensions should direct them, in the process of solution. Therefore, they should not be compelled, nor even allowed to use any form of expression, which they have not made their own. Their first attempts at reasoning, however puerile, should not be rejected—they should be received with complacency, and corrected in a manner, not likely to destroy their reliance upon their own understanding.

LESSON I.

1. Ann has 4 sisters older than herself, and 3 younger than herself. How many sisters has she?

> *Solution.* The number of sisters older, and the number of sisters younger than herself, must be added together. 4 and 3 are 7, which is the answer.

2. Alfred learned the answers of 13 questions, but he forgot 3 of them. How many did he remember?

> *Solution.* We take the number of answers which he forgot, from the number he learned, and the number left is the answer. 3 from 13 leaves 10.

3. There were 17 apples in a basket; only 8 of them were sound. How many were defective?

4. A hat-maker displayed 10 hats in one window, and 6 in another. How many were there in both?

5. If 5 plates lie on one side of a table, and 4 on the other, how many will there be on both sides?

6. At the window, I saw 8 ladies pass up street, and 4 down street. How many passed both ways?

7. A boy, who had 12 buttons upon his jacket, lost off 5 of them. How many were left on?

8. While a flock of 15 wild geese were flying over, 6 of them were shot. How many escaped?

LESSON II.

1. If 8 girls recite, and each of them answer 4 questions, how many will they all answer?

> *Solution.* 8 girls will answer 8 times as many questions as one girl. 8 times 4 questions are 32 questions.

2. How many roses would there be on 5 rose bushes, if each of the bushes bore 5 roses?

3. There are 13 windows in a house. How many of them are open, while only 6 of them are shut?

4. If a house have 6 windows open, and 7 windows shut, how many windows has the house?

5. How many squares of glass are there in a window, that has 4 squares in length, and 3 in width?

6. If 10 barrels of cider can be carried in one wagon, how many can be carried in 4 wagons?

7. A wagoner sold 10 barrels of cider, at 3 dollars a barrel. How many dollars did he receive?

LESSON III.

1. It takes 4 boys to play a game at ball. How many games can 24 boys play, at the same time?

> *Solution.* 24 boys can play as many games as there are *fours* in 24. 4 is contained in 24, 6 times.

2. How many oranges can you purchase for 27 pence, when they are sold at 3 pence apiece?

3. If oranges can be purchased for 3 pence apiece, how many pence will 9 oranges cost?

4. A boy, who had 11 pence, paid 9 pence for a football. How many pence had he left?

5. The sun rises every day, and there are 7 days in a week. How many times does it rise in 7 weeks?

6. William was sick, and was confined to the house 49 days. How many weeks was he sick?

7. There are 7 questions in this lesson, and 7 in the next preceding lesson. How many in both?

LESSON IV.

1. One of 5 brothers, who owned 30 doves in company, sold his share. How many did he sell?

Solution. 1 boy is one fifth of 5 boys, and he sold one fifth of 30 doves. One fifth of 30 is 6.

2. A farmer, who raised 48 lambs, found, that 1 of every 6 was black. How many were black?

3. In fishing, this morning, I caught 13 fishes; but 7 of them escaped. How many had I remaining?

4. There were 5 pears upon each of 3 young pear trees. How many pears were there in all?

5. There are 8 rose bushes on one side of a garden path, and 8 on the other. How many on both?

6. If it take 8 squares of glass for a window, how many squares are required for 8 windows?

7. A boy gave 40 kernels of corn to 5 ducks. How many kernels were there for each duck?

LESSON V.

1. Martha is 10 years old, and Maria is 7 year old. What is the difference in their ages?

Solution. We take 7 years from 10 years, and t.. number left is the difference. 7 from 10 leaves 3.

2. A certain farmer has 20 sheep and 10 lambs. How many more sheep than lambs has he?

3. A boat crossed the ferry with 6 horses, and returned with 5. How many both ways?

4. If a baker use 18 barrels of flour in 9 weeks, how many barrels does he use in one week?

5. How many weeks will 21 barrels of flour last a baker, who uses 3 barrels every week?

6. There are 9 lines ruled upon one page of my writing-book. How many are there on 5 pages?

7. If you have 17 pence, and pay 7 of them for a writing-book, how many will you have left?

LESSON VI.

1. If you wished to divide 54 nuts equally among 6 boys, how many would you give to each boy?

2. What is one sixth of 6? of 54? of 60?

3. One day, there were 7 girls at school, and 5 times as many boys. How many boys were there?

4. How many are 5 times 7? 5 times 5? 6?

5. How many oranges can be purchased for 25 pence, when they are sold at 5 pence apiece?

6. How many times 5 in 25? in 50? in 35?

7. Richard gave 9 pence for a kite, and 8 pence for a line. How much did he give for both?

8. How many are 9 and 8? 9 and 1? 9 and 4?

9. George answered 11 questions, and Stephen 6. How many more did George answer, than Stephen?

10. 11 are how many more than 6? than 9? 7?

11. If 4 boys pay 40 pence for breaking a square of glass, how many pence does each boy pay?

12. What is one fourth of 4? of 40? of 20?

LESSON VII.

1. Of the 9 pictures which hung in my room, I have taken down 3. How many remain hanging?

2. 3 from 9 leaves how many? 3 from 8?

3. I have 8 cows, but my farm will feed twice as many. How many will my farm keep?

4. How many are twice 8? twice 6? twice 9?

5. If you had 7 pins in one sleeve, and 5 in the other, how many would you have in both?

6. How many are 7 and 5? 7 and 3? 7 and 9?

7. A landlord, who had 10 rooms, received 20 men to lodge. How many might he put in a room?

8. What is 1 tenth of 20? of 40? of 60?

9. If 6 boys put 6 books apiece upon the table, how many books will there be on the table?

10. How many are 6 times 6? 6 times 8? 9?

11. James found a cluster of 14 grapes. After giving me 7 of them, how many had he left?

12. 7 from 14 leaves how many? 7 from 8?

LESSON VIII.

1. At 9 o'clock, John was asked, what o'clock it would be 3 hours after that time. You may answer.

2. How many are 9 and 3? 9 and 6? 9 and 4?

3. Suppose a goldsmith can make 7 finger rings in one day, how many can he make in 6 days?

4. How many are 6 times 7? 6 times 8? 10?

5. James has 6 story books, and Sarah has picture books. Who has the greater number of books?

6. 6 from 6 leaves how many? 6 from 11?

7. 24 persons rode to the city in 3 coaches. How many were there to ride in each coach?

8. What is one third of 24? of 15? of 12?

9. If 8 persons can ride in one coach, how many coaches are required to carry 24 persons?

10. How many times 8 in 24? in 72? in 80?

11. A coachman has 4 coaches, and for every coach, has 4 horses. How many horses has he?

12. How many are 4 times 4? 4 times 6? 9?

LESSON IX.

1. If we plant 5 kernels of corn in one hill, in how many hills should we plant 45 kernels?

2. How many times 5 in 45? in 30? in 20?

3. Caroline has read 10 pages, in a book of 19 pages. How many pages has she yet to read?

4. 10 from 19 leaves how many? 10 from 20?

5. 16 chairs are placed in equal numbers on the 4 sides of a room. How many are on one side?

6. What is one fourth of 16? of 4? of 36?

7. There were 6 geese in the pond, and 6 others on the shore. What was the whole number?

8. How many are 6 and 6? 6 and 4? 6 and 9?

9. On a high mountain I found 7 eagles' nests, and in each nest, 2 eaglets. How many eaglets in all?

10. How many are 7 times 2? 7 times 4? 8?

11. If one writing desk accommodate 3 scholars, how many desks are required for 15 scholars?

12. How many times 3 in 15? in 9? in 27?

LESSON X.

1. How many are 3 and 3 and 3 and 3 and 3 and 3? Then 6 times 3 are how many? How many are 6 and 6 and 6? Then 3 times 6 are how many?

2. How many times 7 are there in 28? What is one seventh of 7? What is one seventh of 28?

3. How many times 4 are there in 28? What is one fourth of 4? What is one fourth of 28?

4. If we take 4 and 4 and 4 from 12, what will be left? Then how many times 4 are there in 12?

5. If we take 5 and 5 and 5 from 15, what will be left? Then how many times 5 are there in 15?

6. How many are 7 times 4? How many times 4 are there in 28? What is one fourth of 28?

7. How many are 8 times 5? How many times 5 are there in 40? What is one fifth of 40?

8. How many are 9 times 7? How many times 7 are there in 63? What is one seventh of 63?

9. What is one eighth of 8? How many times 8 are there in 56? What is one eighth of 56?

10. What is one ninth of 9? How many times 9 are there in 90? What is one ninth of 90?

11. What is one tenth of 10? How many times 10 are there in 100? What is one tenth of 100?

12. If you should be 3 times as long in going through the next book, as you have been in going through this, when shall you get through it?

3 and
ny are

hat is

That is

vill be

vill be

times

mes 5

mes 7

times

mes 9

nes 10

going
going