EATON'S
NEW
PRIMARY ARITHMETIC.

THOMPSON, BROWN & COMPANY,
BOSTON.

EASY LESSONS

IN

MENTAL ARITHMETIC,

UPON THE

INDUCTIVE METHOD;

ADAPTED TO THE

BEST MODE OF INSTRUCTION IN PRIMARY SCHOOLS.

BY

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PREFACE.

THE author has prepared this little book both in compliance with the solicitation of teachers and others interested in his larger works, and with the desire to present the first lessons in arithmetic in a form to interest the youngest members of our Primary Schools.

Definitions and extended explanations, being generally unintelligible, and therefore uninteresting and unprofitable, to young children, have been carefully avoided; and the simplest operations in numbers have been presented in the most familiar manner, separately or in combination, as seemed most likely to interest and benefit the pupil.

No effort has been spared to make the book simple in language, varied in expression, progressive in style, and attractive in illustration. It is essentially based on the object-lesson plan; and it is believed that the pupil in the Primary School can more readily acquire a familiarity with numbers from the use of objects and pictures than from an uninterrupted drill on the tables.

In the preparation of these Lessons, the author has received valuable aid from teachers eminent in their profession, and familiar with the best modes of instruction in Primary Schools.

The present edition is printed from new electrotype-plates, and contains a large number of slate exercises distributed throughout the book, and so arranged as not to interfere with the previous editions.

SUGGESTIONS TO TEACHERS.

A KNOWLEDGE of numerical calculation is not the only, perhaps not the most important, object to be attained in the study of a work like this. The child is to be interested, his attention secured, the power of abstraction created, his mind disciplined, in preparation for other and higher pursuits.

The benefits derived in any study, pre-eminently in an elementary study, depend, in great measure, upon the methods employed in teaching it. These pages are designed only as specimen-lessons. A large share of the instruction in primary arithmetic should be oral; and certainly no *teacher* in this department would ever think of following literally the lessons of any book, however perfect the book may be.

The skilful teacher will vary the manner of presenting an idea to meet the ever-varying wants of the day, the lesson, and the pupil. The golden mean between too little and too much explanation should be selected. Most teachers, especially the inexperienced, pass over the first steps and principles too rapidly. The groundwork must be carefully and thoroughly prepared, or real progress is impossible.

Let the pupil repeat, and repeat again, and vary the expression, until he is perfect master of the thought. Incorporate in his very being the idea that 3 and 4 is the same as 4 and 3, that 5 times 6 is the same as 6 times 5, that 8 and 8 is identical with twice 8, &c., and his subsequent progress will be sure and rapid and pleasant.

PRIMARY ARITHMETIC.

LESSON I.

JOHN has one apple in his right hand, and one apple in his left hand: how many apples has he in both hands?

One apple and one apple are how many apples?

How many hands has John?

One hand and one hand are how many hands?

Has John two feet? Count them. One, two.

How many eyes has John?

One eye and one eye are how many eyes?

John had two apples in his left hand; but he has taken one of them in his right hand: how many has he in his left hand now?

One apple taken from two apples leaves how many apples?

Point to John's right hand. Point to his left hand.

One and one are how many? One from two leaves how many?

LESSON II.

WILLIE had two apples, and Mary has given him one more: how many apples has Willie now?

How many apples has Willie in his right hand?

How many has he in his left hand? How many in both hands?

Two apples and one apple are how many apples?

One apple and two apples are how many apples?

How many more apples has Willie in his right hand than in his left?

How many less in his left hand than in his right?

Two and one more are how many?

One and two more are how many?

Which is the greater number, — two and one more, or one and two more?

Answer. — Neither: they are the same.

Two are how many more than one?

One is how many less than two?

Both of Mary's eyes, and one of Willie's, are in sight: how many eyes can you see in the picture?

Which of Willie's eyes is in sight?

Willie has two feet, and Mary has two feet: how many feet have Willie and Mary together?

How many apples are there in Mary's basket?

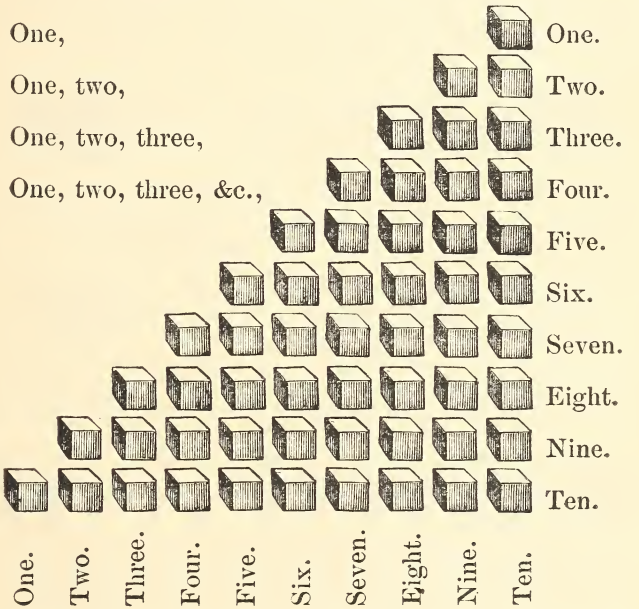
Count the thumb and fingers on your left hand.

Count from one to five, thus: one, two, three, four, five.

Count from one to eight.

LESSON III.

CAN you count ten?
How many can you count?
You may count the blocks in each of these rows.



Which is the left side of this page? Which the right?

You may count the blocks in each of these rows, beginning at the left side of the page, and counting from the bottom to the top.

How many blocks in the row next to the lowest? Count them.

How many blocks in the lowest row?

One block and two blocks are how many blocks?

LESSON IV.


ONE ox and one ox are how many oxen?
One and one are how many?



Two horses and one horse are how many horses?
Two and one are how many? One and two?




Three sheep and one sheep are how many sheep?
Three and one are how many? One and three?





Four goats and one goat are how many goats?
Four and one are how many? One and four?


Five dogs and one dog are how many dogs?
Five and one are how many? One and five?

Count as in the last lesson, without looking at the blocks, thus: one; one, two; one, two, three, &c., to ten.

Six chickens are running one way, and one is running another way: how many chickens are there in the picture?

Six and one are how many? One and six?

A flock of birds are on the ground. Seven of them have nothing to eat; but one has a nice ripe cherry: how many birds are there in the flock?

Seven birds and one bird are how many birds?

Seven and one are how many? One and seven?

Eight birds are standing on a limb of a tree, and one is on the ground: how many birds are there in the flock?

Eight and one are how many? One and eight?

Nine chickens are running towards the left, and one towards the right: how many chickens are there in the brood?

Nine chickens and one chicken are how many chickens?

Nine and one are how many? One and nine?

How many are seven and one? One and seven?

A flock of snow-birds have lighted, ten of them upon the branch of a tree, and one upon the ground: how many birds are there in the flock?

Ten and one are how many? One and ten?

Count from one to eleven, using the above pictures or objects. Count backwards from five to one, thus: five, four, three, two, one.

LESSON V.

James has two sleds, and Willie has one sled: how many sleds have they both?

How many are two and one? One and two?

Two wagons and two wagons are how many wagons?

How many are two and two?

Mr. Fox bought two wheelbarrows, and Mr. Hale bought three: how many did they both buy?

How many are two and three? Three and two?


Charles made two kites, and Edward made four: how many kites did Charles and Edward both make?

How many are two and four? Four and two?


Mary has two hoops, and Lizzie has five: how many hoops have Mary and Lizzie together?

How many are two and five? Five and two?


Two balls and six balls are how many balls?

Two and six are how many? Six and two?

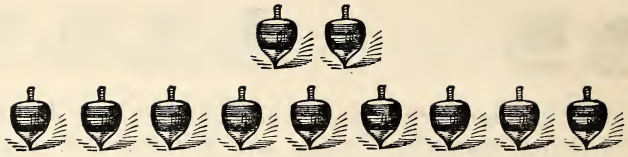

George owns two bows, and Thomas owns seven: how many bows do George and Thomas both own?

Two and seven are how many? Seven and two?


Two arrows and eight arrows are how many arrows?

Two and eight are how many? Eight and two?

Count backwards from ten to one, thus: ten, nine, eight, seven, six, five, four, three, two, one.



Here are two tops spinning in one place, and nine in another: how many tops are spinning in the two places?

Two tops and nine tops are how many tops?

Two and nine are how many? Nine and two?

Two knife-blades and ten knife-blades are how many knife-blades?

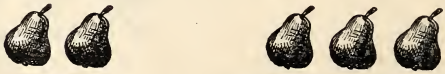
Two and ten are how many? Ten and two?

Count from one to twelve.

LESSON VI.

ONE apple and three apples are how many apples?

How many are one and three? Three and one?



A kind lady gave two pears to Georgie, and three to Willie: how many pears did she give to both of them?

How many are two and three? Three and two?

How many oranges are three oranges and three oranges?

How many are three and three?

How many threes make six? Two threes make how many?

Four peaches grew on one little tree, and three grew on another: how many grew on both?

Four and three are how many? Three and four?

Five lemons were used in making one pailful of lemonade, and three in making another: how many were used in making the two pailfuls?

Five and three are how many? Three and five?

Six plums and three plums are how many plums?

Six and three are how many? Three and six?

Seven and three blackberries are how many blackberries?

Seven and three are how many? Three and seven?

How many are five and five?

Eight acorns are in one row, and three in another row: how many acorns are in both rows?

Eight and three are how many? Three and eight?

Addie found nine large red strawberries, and Ella found three: how many did both of them find?

Nine and three are how many? Three and nine?

Ten stems of currants grew on one bush, and three stems grew on another bush: how many stems grew on both bushes?

Ten and three are how many? Three and ten?

How many are six and three and four?

How many are three and six and four?

How many are five and four and four?

How many are four and five and four?

How many are two and seven and three?

How many are four and two and seven?

LESSON VII.


ONE pig and four pigs are how many pigs?
One and four are how many? Four and one?


Two cats and four cats are how many cats?
Two and four are how many? Four and two?


Alfred has three tame rabbits, and Asa has four: how many rabbits have Alfred and Asa?
Three and four are how many? Four and three?


Four squirrels are eating nuts in one row, and four in another row: how many squirrels are eating nuts?
How many are four and four?
Two fours make how many?


Here are five rats for pussy, and here are four more: how many rats are there for pussy?
How many are five and four? Four and five?

Six apples and four apples are how many apples?
How many are six and four? Four and six?

Seven balls and four balls are how many balls?
How many are seven and four? Four and seven?

Eight balls and four balls are how many balls?
Eight and four are how many? Four and eight?

Nine and four are how many? Four and nine?

How many are ten and four? Four and ten?
How many are three and two? Two and three?
How many are two and six? Six and two?
How many are two and eight? Eight and two?
How many are two and nine? Nine and two?
How many are three and three?
How many are two and seven? Seven and two?
How many are three and five? Five and three?
How many are four and two? Two and four?
How many are five and two? Two and five?
How many are three and three and five?
How many are two and six and three?
How many are three and two and five?

LESSON VIII.

ONE acorn and five acorns are how many acorns?

Two tops and five tops are how many tops?

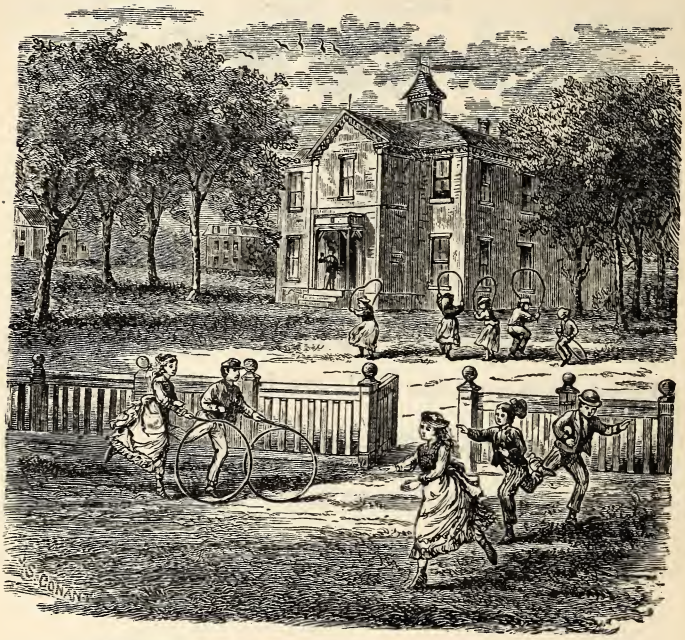
Three balls and five balls are how many balls?

Four and five are how many? Five and four?

Six and five are how many? Five and six?

How many are eight and five? Five and eight?

Ten and five are how many? Five and ten?
How many are five and five?
How many are nine and five? Five and nine?
How many are ten and two and two?
How many are six and five and three?
How many are five and four? Three and six?
How many are four and four and six?



LESSON IX.

HERE is a happy group of children. How earnestly they play! They are good children, and love to study as well as play. The teacher is ringing the bell for them; but we will count them before they go in: one, two, three, four, five boys; one, two, three, four, five girls.

Five boys and five girls are how many children? Five and five are how many?

One boy and one girl are driving hoop: how many are driving hoop?

Two boys and one girl are playing catch: how many are playing catch? Two and one are how many? One and two?

Three girls and two boys are jumping rope: how many are jumping rope? Three and two are how many? Two and three?

Two children are rolling hoop, three are playing catch, and five are jumping rope. How many are two and three and five? Three and two and five? Five and two and three?

There are three posts on one side of the gate, and four on the other side: how many posts are there in the fence? Three and four are how many? Four and three?

Four trees stand on one side of the schoolhouse, and four on the other: how many trees are there on both sides? How many are four and four?

There are four windows on the end of the house, and five on the front: how many windows do you see in the house? How many are five and four? Four and five?

NOTE. — The above may also serve as a reading-lesson, and the children be asked to state the answers, and name the objects in the picture.

LESSON X.

TWO geese were near a pond, and one of them ran into the water: how many were left on the land? One from two leaves how many?

Three turkeys were standing together; but one has lain down: how many remain standing?

Three less one are how many? Three less two?

Charlie had four hens, but gave one to George: how many had he left?

One from four leaves how many?

One and three are how many? Three and one?

Three taken from four leaves how many?

Here are five ducks: one has its head down. How many have their heads up?

One from five leaves how many?

How many remain, if four are taken from five?

Four and one are how many? One and four?

Daniel has six doves: one of them is dark colored, and the rest are white: how many are white?

One from six leaves how many?

How many remain, if five are taken from six?

How many are one and five? Five and one?

Here are seven little chickens: one of them is running towards the right, and the rest are running towards the left: how many are going towards the left?

One from seven leaves how many?
Seven less six are how many?
Six and one are how many? Three and four?

One of these robins has a ripe cherry: how many have no cherry?

How many are one and seven? Seven and one?
Eight less one are how many? Eight less seven?

Count these sparrows. One is on the ground: how many are on the branch?

One taken from nine leaves how many?
Nine less eight are how many?
How many are eight and one? One and eight?

Here are ten humming-birds: one of them is getting honey from a flower: how many others do you see in the picture?

Ten less one are how many? Ten less nine?
How many are nine and one? One and nine?
How many are six and four? Four and six?
How many are six and one? One and six?
How many are five and four? Four and five?
How many are nine and five? Five and nine?
How many are seven and three? Three and seven?
How many are ten and four? Four and ten?

LESSON XI.

JANE has three roses: two of them are buds: how many are in full bloom?

Two from three leaves how many? One from three?

Two and one are how many? One and two?

Three are how many more than two?

Three are how many more than one?

Sarah gathered four pinks, but broke the stems of two of them: how many remain unbroken?

Two from four leaves how many?

Four are how many more than two?

Two and two are how many?

Nancy found five tulips: two of them had leaves on the stems: how many had no leaves?

Five less two are how many?

Five are how many more than three?

Three and two are how many? Two and three?

Here are six field lilies: two of them are drooping: how many are upright?

Two are how many less than six? Six are how many more than four?

Four and two are how many? Two and four?

Ellen found seven violets, two of them in the meadow, and the rest on the hill: how many did she find on the hill?

Two from seven leaves how many?

Five and two are how many? Two and five?

Eight clover-blossoms are in a flower-bed: two are on one side of the bed: how many are on the other side? Eight less two are how many? Eight less six?

Six and two are how many? Two and six?

Georgie found nine snowdrops, and gave two of them to his sister: how many had he remaining?

Two from nine leaves how many?

How many are seven and two? Two and seven?

Martha has ten daisies: two of them are white, and the rest are pink: how many are pink? Two from ten leaves how many? Seven from ten?

Count from one to thirteen.

LESSON XII.

FOUR butterflies were on the ground, but three of them are flying away: how many remain on the ground?

Three from four leaves how many?

Three and one are how many? One and three?

Here are six honey-bees: three of them have their wings spread: how many have them closed?

Three from six leaves how many?

Eight spiders were upon the wall; but three have fallen upon the floor: how many remain upon the wall?

Three taken from eight leaves how many?

Eight are how many more than five?

Ten flies were on the window; but three of them are caught in a spider's web: how many are still free?

Three from ten leaves how many? How many are seven and three?

LESSON XIII.

FIVE stalks of wheat were standing in a field; but the wind has broken four of the heads down: how many heads still stand upright?

Four from five leaves how many?

Five are how many more than one?

Here are seven heads of barley: four of them have leaves upon the stalks: how many are without leaves?

Four from seven leaves how many?

How many are seven less three?

Four and three are how many? Three and four?

Emily has nine flowers: four of them are pinks, and the rest are tulips: how many are tulips?

Four from nine leaves how many?

Nine are how many more than four?

Charlie has eleven chickens: four of them are in one brood, and the rest are in another: how many are in the other?

Four from eleven leaves how many?

How many are seven and four? Four and seven?

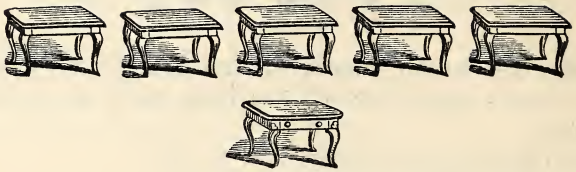
Where are Charlie's two broods of chickens? Point at them.

Seven are how many more than four?

Four are how many less than seven?

Count from one to fifteen.

LESSON XIV.



A CABINET-MAKER made six tables: five of them were without drawers: how many had drawers?

Five from six leaves how many?

There are eight chairs in one room: five of them have cane seats: how many have wooden seats?

Five from eight leaves how many?

Three and five are how many?

Here are nine stools: five of them have four legs apiece: how many have only three legs apiece?

Five taken from nine leaves how many?

How many are five and four? Four and five?

In two birds' nests there are ten eggs: if five of them are in one nest, how many are in the other?

Five from ten leaves how many?

Five and five are how many?

LESSON XV.

Now, children, as you have learned to count, and to add and subtract small numbers, I will give you some marks or *figures*, which stand for numbers. Each figure means the same as the word which stands under it: —

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

One, Two, Three, Four, Five, Six, Seven, Eight, Nine.

Besides these nine figures, there is one more, which stands for *nothing:* this is it: 0. It looks like the letter O. We call it *zero.* It is sometimes called *a cipher*, and sometimes *naught*, or *nothing.*

These ten marks are called *Arabic* figures, because they were used by the Arabs a great many hundred years ago.

When we *write* the figures, we make them in this form: —

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

Naught, One, Two, Three, Four, Five, Six, Seven, Eight, Nine.

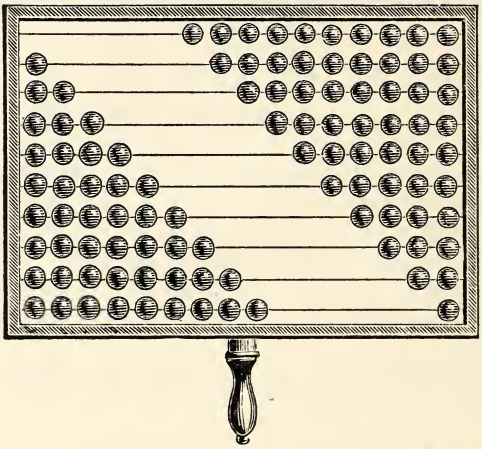
Now you may take your slates and pencils, and make the figure that stands for *one.* Make the figure that stands for *six.* We call it the *figure six.* Make the figure *four.* Make all of the figures, and tell what each stands for.

Write, read, and add the following numbers on the slate or blackboard, or recite orally: —

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2	*3*	*7*	*2*	*8*	*4*	*5*	*6*	*7*	*8*
2	*3*	*4*	*3*	*3*	*4*	*2*	*2*	*1*	*0*
2	*3*	*1*	*9*	*2*	*7*	*2*	*7*	*4*	*6*

LESSON XVI.

To aid us in writing larger numbers, we will make a little frame of wood and wires, and put some balls on the wires.



Here is a picture of the frame with the balls on the wires. We call it the *Numeral Frame.* How many wires are there? How many balls on the top wire? How many on the second wire? On the third? Fourth? Fifth?

Are there ten balls on each wire?

Is there any Arabic figure that stands for ten? No. How, then, shall we write ten?

It is written this way: 10. First write the figure 1, and then put the zero on the right of the 1. The 0 is put on the right of the 1 to show that the 1 is to stand for *once ten balls*, and *not* for *one single ball.*

Now *you* may make the figures that stand for ten.

We will. Here they are: 10.

That is right. What figures stand for ten?

The figure 1 with a 0 on the right of the 1.

Very well. What does the 1 mean when it has a 0 on the right of it? It means *one ten*, or *once ten.*

Count from one to nine by twos, thus: one, three, five, seven, nine.

LESSON XVII.

How many balls are there on the upper wire? Ten.

How many on the second wire? Ten.

How many on both together? Twenty.

How many tens make twenty? Two tens make twenty. Here are the figures that stand for twenty: 20. They are the figure 2 with the 0 on the right of the 2. The zero at the right of the 2 shows that the 2 stands for *two tens*, or *twice ten* balls, and *not* for *two balls.*

Will you make the figures for twenty? Yes: 20.

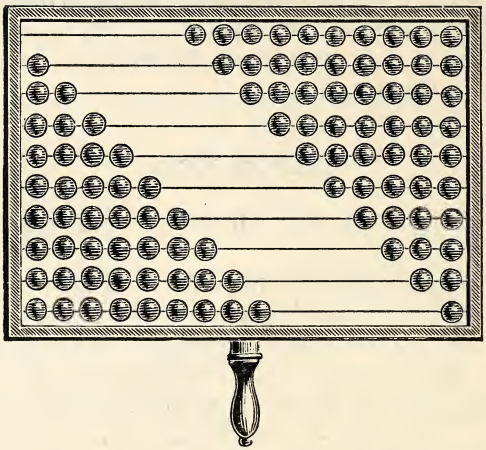
What are they? The figure 2 with 0 at the right of it. What does the 2 mean when it has 0 at the right of it? It means two tens, or twenty. How many are twice ten? Twice ten are twenty.

How many balls are there on the *three* upper wires? Count them. There are thirty. How many tens make thirty? Three times ten are thirty. Can you write the figures for thirty? We can: 30. What are they? A 3 with 0 at the right of it.

Write, read, and add: —

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
5	*3*	*1*	*8*	*4*	*7*	*5*	*6*	*3*	*4*
2	*5*	*4*	*0*	*2*	*1*	*4*	*2*	*3*	*4*
3	*1*	*2*	*2*	*1*	*2*	*1*	*2*	*3*	*2*

LESSON XVIII.



HERE are ten balls upon the top wire, and there is one ball by itself on the second wire. How many are ten balls and one ball? Ten balls and one ball are eleven balls. These figures stand for ten and one, or eleven: 11. The first or left figure 1 stands for *once ten* balls, and the 1 at the right hand stands for the *one* ball.

You may write the figures for eleven: 11. What are they? They are the figure 1, and the figure 1 at the right of the first 1. What does the first 1 stand for? What does the second 1 stand for? How many are 10 and 1?

There are ten balls on the top wire, and two balls stand by themselves on the third wire. How many are ten and two? Ten and two are twelve. These figures stand for ten and two, or twelve: 12. The figure 1 stands for the ten, and the figure 2 at the right of the 1 stands for the two. *You* may write

the figures for twelve. Can you write thirteen in figures? Yes: 13. Write fourteen: 14. Fifteen: 15. Sixteen: 16. Seventeen: 17. Eighteen: 18. Nineteen: 19. Very well. All right.

WRITTEN EXERCISES.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
From	9	7	5	10	10	8	10	9	10	9
Take	3	5	1	3	4	3	2	0	5	2
	6									

LESSON XIX.

How many balls are there on the top wire of the Numeral Frame? Ten.

How many on the second wire? Ten.

How many on both wires? Twenty.

Now, if we put one more ball with these twenty, how many balls shall we have? If we put one ball with twenty balls, we shall have twenty-one balls. These figures stand for twenty-one: 21. What figures are they? They are a 2 with a 1 on the right of it. The 2 stands for twenty, or two times ten balls; and the 1 at the right of the 2 stands for the one ball.

How do the figures for twenty-one differ from those for twelve? They are the same figures; but they are placed differently. How are they placed? For twenty-one, the 2 stands at the left of the 1; but, for twelve, the 1 stands at the left of the 2. When two figures stand for a number, the left-hand figure is for the *tens*, and the right-hand figure for the *ones*.

Now you may write the figures for twenty-one: 21. Now write them for twelve: 12. That is right.

If two balls are put with twenty balls, how many balls shall we have? Twenty balls and two balls are twenty-two balls. These figures stand for twenty-two: 22. The left-hand 2 stands for the twenty, or the *twice ten* balls; and the right-hand 2, for the *two* balls.

How many are twenty and three? Twenty and three are twenty-three.

Can you make the figures for twenty-three? Yes: 23. Right.

Now you may make the figures for twenty-four: 24. For twenty-five: 25. For twenty-six: 26. What number do these figures stand for: 27? They stand for twenty-seven. These: 28? For twenty-eight. These: 29? For twenty-nine.

Count from one to thirty. From thirty to fifty.

LESSON XX.

Now I think you can make the figures for any number that is less than one hundred.

You may make the figures for any ten numbers you please, and tell me what they stand for. We will.

36	stands for	Thirty-six.
63	"	Sixty-three.
47	"	Forty-seven.
49	"	Forty-nine.
94	"	Ninety-four.
77	"	Seventy-seven.
75	"	Seventy-five.
57	"	Fifty-seven.
99	"	Ninety-nine.
31	"	Thirty-one.
43	"	Forty-three.

Now you may write the words for any ten numbers, and make the figures which mean the same.

Seven	is	the same as	7
Seventeen	"	"	17
Twenty-seven	"	"	27
Thirty-seven	"	"	37
Seventy-three	"	"	73
Thirty-five	"	"	35
Fifty-three	"	"	53
Forty-eight	"	"	48
Nine	"	"	9
Ninety	"	"	90

Does the 9 stand for the same in these last two numbers? It does not. In the last number it stands for 9 *tens*, and in the other it stands for 9 *ones*. How do you know it stands for 9 *tens* in the last number? Because there is a figure at the right of it; and this shows that it is 9 *tens*.

How many Arabic figures are there? Are there any other marks that stand for numbers? Yes: there are seven *letters* which stand for numbers. Here they are: —

I, V, X, L, C, D, M.

One, Five, Ten, Fifty, One hundred, Five hundred, One thousand.

These are called *Roman figures*. The Arabic figures are much better than the Roman, because they are easier to use. You will notice the manner of using the Roman figures at the beginning of these lessons; and perhaps your teacher will tell you more about them.

Write and read: —

11, 13, 19, 20, 24, 29, 35, 64, 51, 96,
89, 60, 93, 49, 78, 17, 21, 12, 10, 72.

LESSON XXI.

THESE little children are having a nice time. Carrie has invited five of her playmates to her birthday-party; and they are playing "take tea" with her at the table, while her little brothers and sister are amusing themselves on the floor. Her mother sits in the great arm-chair, very happy to see her children and little friends so happy.

Carrie is pouring tea. How many girls do you see at her left hand? How many at her right? How many more on one side than on the other? Two from three leaves how many? Three are how many more than two?

Ella is giving the dolls a ride. She put five dolls in the wagon; but one of them has fallen out: how many remain in? One from five leaves how many?

There are three books on the lower shelf of the book-case, and two on the next shelf. How many books are there on both shelves? How many more on one shelf than on the other?

Count the hats hanging upon the hooks.

How many less in the upper row than in the lower?

Three from four leaves how many?

Three and four are how many? Four and three?

Little Arthur is playing with the blocks on the floor. Can you count the blocks? How many are there? How many more on one side of him than on the other?

How many are five and four? Five less four?

One ox has 4 legs, and one horse has 4 legs: how many legs have one ox and one horse? How many are 4 and 4?

If a horse will eat 5 quarts of meal, and an ox 4 quarts, how many quarts of meal will a horse and an ox eat?

How many are 5 and 4? 4 and 5?

An ox will eat 3 tons of hay in a year, and a horse 5 tons: how many tons will an ox and a horse together eat?

WRITTEN EXERCISES.

Add

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
6	5	4	3	4	5	8	7	5	9
3	2	9	6	5	4	0	4	3	8
1	3	2	0	1	2	2	2	1	2
—	—	—	—	—	—	—	—	—	—

LESSON XXII.

REPEAT the following tables: —

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

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

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

John has 7 cents, and James has 6: how many cents have they together?

Count from fifty to seventy. Make the figures for seventy: 70.

LESSON XXIII.

REPEAT the following tables: —

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

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

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

5 boys from 14 boys leaves how many boys?
5 boys and 9 boys are how many boys?

Count from seventy to ninety. Make the figures for ninety: 90.

LESSON XXIV.

1. Mr. Flint paid 6 dollars for a clock, and 2 dollars more for repairing it: how many dollars has the clock cost him? 6 and 2 are how many? 2 and 6?

2. Charles studied 6 hours one day, and 5 hours the next day: how many hours did he study in two days?

How many are 6 and 5? 6 and 3?

3. Mr. Dean paid 6 dollars for a cord of oak wood, and 4 dollars for a cord of pine: how many dollars did he pay for the two cords?

How many are 6 and 4? 4 and 6?

4. Mr. Dean cut his pine wood in 6 hours, and his oak in 7 hours: in how many hours did he cut the pine and the oak wood?

How many are 6 and 7? 8 and 6?

5. Mr. Smith bought one pig for 6 dollars, and another for 9 dollars: how many dollars did he pay for both pigs?

How many are 6 and 9? 9 and 5?

6. Mr. Smith planted 6 acres of corn, and 3 acres of potatoes: how many acres did he plant?

7. If a pound of pork is worth 6 cents, and a pound of beef 8 cents, how many cents are a pound of pork and a pound of beef worth?

Repeat the table: —

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

8. Count by twos from nine to twenty-one, thus: nine, eleven, thirteen, &c. From ten to twenty.

LESSON XXV.

1. SAMUEL caught 7 fishes the first time he went angling, and 3 the second time: how many fishes did he catch?

7 and 3 are how many? 7 and 5?

2. Samuel sold all the fishes he caught the first day for 7 cents, and those he caught the second day for 6 cents: how many cents did he receive for all of his fishes?

How many are 7 and 6? 6 and 7?

Repeat the table: —

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

The teacher will give you the names, and explain the uses, of the signs in the following table. This and the above table *mean* exactly the same. The *words* in the first mean the same as the *signs* in the second.

$7 + 1 = 8$	$7 + 6 = 13$
$7 + 2 = 9$	$7 + 7 = 14$
$7 + 3 = 10$	$7 + 8 = 15$
$7 + 4 = 11$	$7 + 9 = 16$
$7 + 5 = 12$	$7 + 10 = 17$

How many are $6 + 7$? $8 + 7$?

How many are $5 + 7$? $9 + 7$?

Write and read: —

12, 40, 65, 32, 81, 53, 92, 77, 28, 67.

LESSON XXVI.

1. THERE were 8 elephants in one menagerie, and 3 in another: how many were there in both?

How many are 8 and 3? 3 and 8?

2. Albert paid 8 cents for going into one menagerie, and 7 cents for going into the other: how many cents did he pay in all?

How many are 8 and 7? 8 and 5?

3. One of the elephants carried 8 boys and 10 girls upon his back: how many children did he carry upon his back?

How many are 8 and 10? 8 and 6?

Repeat the table: —

$8 + 1 = 9$	$8 + 6 = 14$
$8 + 2 = 10$	$8 + 7 = 15$
$8 + 3 = 11$	$8 + 8 = 16$
$8 + 4 = 12$	$8 + 9 = 17$
$8 + 5 = 13$	$8 + 10 = 18$

LESSON XXVII.

1. ONE hunter killed 9 tigers, and another killed 4: how many did both of them kill?

How many are 9 and 4? 4 and 9?

2. One of these hunters sold his tiger-skins for 9 dollars, and the other for 7 dollars: how many dollars did they both receive?

3. Susan found 9 chestnuts under one tree, and 10 under another tree: how many nuts did she find?

How many are 9 and 1?	1 and 9?
How many are 9 and 2?	2 and 9?
How many are 9 and 3?	3 and 9?

How many are 9 and 4?	4 and 9?
How many are 9 and 5?	5 and 9?
How many are 9 and 6?	6 and 9?
How many are 9 and 7?	7 and 9?
How many are 9 and 8?	8 and 9?
How many are 9 and 9?	9 and 9?
How many are 9 and 10?	10 and 9?

LESSON XXVIII.

1. WALTER bought one globe for 10 dollars, and another for 5 dollars: what did he pay for both globes?

How many are 10 and 5? 10 and 2?

2. Walter found 10 islands marked on his best globe, and 7 on the other: how many did he find on both?

How many are 10 and 7? 7 and 10?

3. If the sun is up 10 hours one day, and 10 hours the next day, how many hours is the sun up in the two days?

How many are 10 and 10?

Repeat the table: —

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

WRITTEN EXERCISES.

Add

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
7	3	9	10	2	8	10	9	5	25
9	8	2	7	5	9	9	4	8	8
—	—	—	—	—	—	—	—	—	—

LESSON XXIX.

A FEW days ago, we saw a happy group of children at play in the yard. Here we see them in the schoolroom; but there are more here than we saw in front of the schoolhouse. Sometimes children are kept in from recess, to punish them; and sometimes they stay in of their own accord, to study. These scholars look like very good children. Those in their seats are very still and studious, and those on the floor are very eager to recite: so I think the teacher did not keep them in to punish them.

1. Can you count the scholars that are standing on the floor? Ten girls and ten boys.

How many are 10 and 10?

2. Count the scholars in the back row of seats. Now count those in the front row.

How many are there in both rows?

How many are 3 and 6? 6 and 3?

3. Count the caps on the upper row of hooks. How many are there? How many hooks without caps?

How many are 7 and 4? 4 and 7?

4. How many caps are there in the second row? How many hooks without caps?

8 and 3 are how many? 3 and 8?

5. How many caps in the lower row? How many hooks without caps?

How many are 9 and 2? 2 and 9?

6. There is one cap hanging on the end of the desk: how many caps can you see in the room?

How many are 9 and 8 and 7 and 1?

7. There are 20 scholars on the floor, and 6 in the front row of desks: how many are 20 and 6? 6 and 20?

8. How many are 20 and 6 and 3? 20 and 3 and 6? 6 and 20 and 3?

9. If we count the scholars and the teacher, we shall find the whole number of persons in the room. How many are there?

How many are 20 and 6 and 3 and 1? 20 and 9 and 1? 20 and 10?

WRITTEN EXERCISES.

Add

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
7	4	9	1	8	20	9	15	23	53
6	8	6	4	9	10	7	4	7	7
—	—	—	—	—	—	—	—	—	—

LESSON XXX.

1. Mr. Abbott bought 6 barrels of flour, and sold 2 of them: how many barrels had he left?
2 from 6 leaves how many? 4 from 6?
How many are 6 and 2? 6 and 4?

2. Mr. Abbott paid 5 dollars a barrel for his flour, and sold it at 6 dollars: how many dollars did he gain on 1 barrel?
5 from 6 leaves how many? 1 from 6?
Repeat the table: —

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

WRITTEN EXERCISES.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
From	14	10	7	13	11	9	12	15
Take	5	3	2	4	1	5	6	9
	—	—	—	—	—	—	—	—

LESSON XXXI.

1. Mr. Astor sent 7 ships to India; but 6 of them were wrecked: how many of them reached India in safety?
6 from 7 leaves how many? 1 from 7?
How many are 6 and 1? 1 and 6?

2. 7 passengers sailed in one of Mr. Astor's ships; but 3 of them were lost on the passage: how many were saved?

7 less 3 are how many? 7 less 4?
How many are 3 and 7? 4 and 7?
Repeat the table: —

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 XXXII.

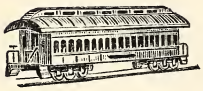
1. Mr. Smith owned 8 houses; but he has sold 5 of them: how many has he now?
How many are 8 less 5? 8 less 3?
2. Mr. Smith rents his best house for 8 dollars a month, and his poorest for 6 dollars: how many more dollars does he receive each month for one than for the other?
6 from 8 leaves how many? 3 from 8?
2 from 8 leaves how many? 5 from 8?
How many are 6 and 2? 2 and 6?
Repeat the table: —

8 less 1 are 7	8 less 5 are 3
8 less 2 are 6	8 less 6 are 2
8 less 3 are 5	8 less 7 are 1
8 less 4 are 4	8 less 8 are 0

The teacher will explain the signs in the following table: —

$8 - 1 = 7$	$8 - 5 = 3$
$8 - 2 = 6$	$8 - 6 = 2$
$8 - 3 = 5$	$8 - 7 = 1$
$8 - 4 = 4$	$8 - 8 = 0$

LESSON XXXIII.



1. In one railroad train running from Andover to Boston there are 9 cars, and in another train there are 4 cars: how many more cars in the first train than in the second?

How many are 9 less 4? 9 less 5?

How many are 9 and 4? 9 and 5?

2. Suppose one train stops 9 times in going from Andover to Boston, and the other only 3 times: how many more times does one train stop than the other?

How many are 9 less 3? 9 less 6?

3. Nine daily coaches run on one road, and 4 on another: how many less run on the second than on the first road?

4 are how many less than nine?

4. One coach carries 9 passengers, and another carries 5: how many does one carry more than the other?

5 from 9 leaves how many? 4 from 9?

5. One coachman drives 9 miles in an hour, and another drives 8 miles in the same time: how much farther does one drive in an hour than the other?

9 are how many more than 8?

Repeat the table: —

$9 - 9 = 0$	$14 - 9 = 5$
$10 - 9 = 1$	$15 - 9 = 6$
$11 - 9 = 2$	$16 - 9 = 7$
$12 - 9 = 3$	$17 - 9 = 8$
$13 - 9 = 4$	$18 - 9 = 9$

6. Count by twos from twenty to fifty.

7. Write and read: —

29, 63, 48, 96, 78, 41, 87, 59, 36, 78, 42.

LESSON XXXIV.

1. The express-wagon went to the depot 10 times on Monday, and only 7 times on Tuesday: how many more times did it go on Monday than on Tuesday?

How many are 10 less 7? 10 less 3?

How many are 10 and 7? 10 and 3?

2. The expressman carried 10 packages to one house, and only 5 to another: how many less packages did he carry to the second house than to the first?

If 5 are taken from 10, how many will remain?

How many are 10 less 5? $10 - 5$?

How many are 10 and 5? $10 + 5$?

3. Henry can skate 10 miles in an hour, and Philip but 8: how many more miles can Henry skate in an hour than Philip?

10 are how many more than 8?

How many are 10 and 8? 8 and 10?

4. The ice was 10 inches thick one day when Henry skated, and only 4 inches thick on another day: how many inches thicker was it on one day than on the other?

Repeat the table: —

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

5. How many are $19 - 8$? $16 - 5$? $10 - 4$? $17 - 9$? $13 - 6$? $12 - 8$? $17 - 7$? $8 - 7$? $11 - 4$? $16 - 7$?

6. Count by twos from fifteen to forty-nine.

LESSON XXXV.

Mr. Day and his family are enjoying a picnic. They are all delighted with a ramble in the country. The boys are coming with the fishes they have caught. Ada and Fanny are making wreaths of flowers, while nurse is holding little Hattie, and Emma is watching her father and mother as they prepare the dinner Fido expects a share.

1. Fido has 4 feet, but Mr. Day has only 2: how

many more feet has Fido than Mr. Day? Two is how many less than four?

2. Two little girls sit on one side of the nurse, and one on the other: how many on both sides?

How many more on one side than on the other?

How many are 2 and 1? 2 less 1?

3. Mr. Day has 4 girls and 2 boys: how many children has he? How many more girls than boys?

How many are 4 and 2? 4 less 2?

4. There are 2 boys, 4 girls, 2 women, and 1 man, in Mr. Day's family: how many persons in all?

5. Now, if we count Fido as one of the family, how many are there in the family?

How many are 2 and 4 and 2 and 1? 2 and 4 and 2 and 1 and 1?

6. We see 3 small trees on the hill on one side of Mr. Day, and 6 on the other side: how many do we see on both sides? how many more on one side than on the other?

6 are how many more than 3?

3 are how many less than 6?

How many are 6 and 3? 3 and 6?

7. How many trees do you see in the picture?

How many are 1 and 6 and 3? 6 and 1 and 3?

How many are $10 - 3$? $10 - 6$?

8. Joseph caught 7 fishes, and Daniel caught 12: how many did both of them catch?

How many are $12 + 7$? $12 - 7$?

9. Count, by twos, from fifty to eighty.

WRITTEN EXERCISES.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
From	12	10	6	15	11	9	18	12	22
Take	7	3	3	8	4	2	5	3	3
	—	—	—	—	—	—	—	—	—

LESSON XXXVI.


1. 1 SLED and 1 sled, or 2 times 1 sled, are how many sleds?

2 times 1 are how many? Once 2?

Twice 1 are how many? 1 and 1?



2. If Frank should make 1 top each day, how many tops would he make in 3 days?

How many are 3 times 1? Once 3?




3. If Lewis eats 1 apple at each recess, how many apples will he eat in 4 recesses?

How many are 4 times 1? Once 4?





4. If 1 pear costs 1 cent, how many cents will 5 pears cost?

How many are 5 times 1? Once 5?

Repeat the table: —

6 times 1 are 6	Once 6 is 6
7 times 1 are 7	Once 7 is 7
8 times 1 are 8	Once 8 is 8
9 times 1 are 9	Once 9 is 9
10 times 1 are 10	Once 10 is 10

LESSON XXXVII.

1. ONE boy has 2 hands: how many hands have two boys?

How many are 2 times 2? 2 and 2?

2. One boy has 2 feet: how many feet have 3 boys?

How many are 3 times 2? Twice 3?

3. One goat has 2 horns: how many horns have 4 goats?

How many are 4 times 2? Twice 4?

4. One wheelbarrow has 2 handles: how many handles have 5 wheelbarrows?

How many are 5 times 2? Twice 5?

Repeat the table: —

6 times 2 are 12	Twice 6 are 12
7 times 2 are 14	Twice 7 are 14
8 times 2 are 16	Twice 8 are 16
9 times 2 are 18	Twice 9 are 18
10 times 2 are 20	Twice 10 are 20

LESSON XXXVIII.


1. HERE are 3 grape-leaves on one stem, and 3 on another: how many leaves on both?

How many are twice 3? 3 times 2?



2. If 3 oak-leaves grow upon 1 stem, how many leaves grow upon 3 stems?

How many are 3 times 3? $3 + 3 + 3$?




3. Walter plucked 4 twigs from a walnut-tree, and found 3 leaves on each twig: how many leaves did he pluck?

How many are 4 times 3? 3 times 4?





4. If 3 pine-leaves grow from 1 bud, how many grow from 5 buds?

How many are 5 times 3? 3 times 5?

Repeat the table: —

6 times 3 are 18	3 times 6 are 18
7 times 3 are 21	3 times 7 are 21
8 times 3 are 24	3 times 8 are 24
9 times 3 are 27	3 times 9 are 27
10 times 3 are 30	3 times 10 are 30

LESSON XXXIX.


1. ONE elephant has 4 legs: how many legs have 2 elephants?

How many are 2 times 4? 4 times 2?



2. If a tiger has 4 legs, how many legs have 3 tigers?

How many are 3 times 4? 4 times 3?




3. How many feet have 4 lions, if each lion has 4 feet?

How many are 4 times 4?





4. A camel has 4 feet: how many feet have 5 camels?

How many are 5 times 4? 4 times 5?






5. One dog has 4 legs: how many legs have 6 dogs?

How many are 6 times 4? 4 times 6?

Repeat the table: —

7 times 4 are 28	4 times 7 are 28
8 times 4 are 32	4 times 8 are 32
9 times 4 are 36	4 times 9 are 36
10 times 4 are 40	4 times 10 are 40

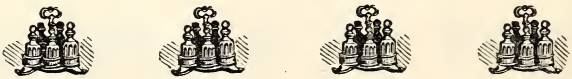
6. Write and read: —

36, 62, 12, 14, 41, 83, 22, 54, 71, 98, 30, 78.

LESSON XL.

1. Now for a boat-race! 5 boys in 1 boat, and 5 in the other: how many boys in both boats?
How many are twice 5? 5 times 2?
How many are 5 and 5? $2+2+2+2+2$?

2. See the pretty bird's nests! 5 eggs in each nest: how many eggs in 3 nests?
How many are three times 5? 5 times 3?
How many are 5 and 5 and 5? $5+5+5$?



3. Here are 4 castors, with 5 bottles in each castor: how many bottles in all?
How many are 4 times 5? 5 times 4?

4. See these 5 flower-vases, with 5 beautiful blossoms in each vase: how many blossoms are there in all the vases?

5 times 5 are how many?

5. If one dove is worth 5 cents, how many cents are 6 doves worth?

How many are 6 times 5? 5 times 6?

How many are 6 and 6? 6 less 5?

6. Mr. Pierce sold 7 chairs, and received 5 shillings for each chair: how many shillings did he receive for the 7 chairs?

How many are 7 times 5? 5 times 7?

How many are $5+5+5+5+5+5+5$?

Repeat the table: —

6 times 5 are 30	5 times 6 are 30
7 times 5 are 35	5 times 7 are 35
8 times 5 are 40	5 times 8 are 40
9 times 5 are 45	5 times 9 are 45
10 times 5 are 50	5 times 10 are 50

Count, by threes, from one to thirty-one; from twelve to forty-eight.

LESSON XLI.

Look at this lively scene. It is a farm-yard on a bright spring morning. Mr. Brown and his hired man have yoked the oxen, and are going to plow. Two of the boys are going to the field with the horse-cart, and the other two are driving the cows to pasture. Old Towser capers before the horse, and the biddies and the birds are as busy as he.

Now for a *lesson* from the picture.

1. Two boys are in the cart, and two are driving the cows: how many boys are there in the picture?

How many are 2 and 2? 2 times 2?

2. If we count Mr. Brown and his man, we have two more persons. How many are 3 times 2 persons?

Which is more, 3 times 2, or 2 times 3?

3. Each ox has 2 horns: how many horns have 4 oxen?

How many are 4 times 2? Twice 4?

4. 5 pairs of martins are flying towards the bird-house: how many martins are there?

How many are 5 times 2? Twice 5?

5. There are 3 posts under each end of the corn-barn: how many under both ends?

Twice 3 are how many? 3 times 2?

6. One ox has 4 legs: how many legs have 4 oxen?

How many are 4 times 4?

7. There are 5 doves on the corn-barn, and 5 on one of the large barns: there are also 5 at their windows; but they are in the shade, and we cannot see them very well. How many doves in all?

How many are 3 times 5? 5 times 3?

8. The harrow has 5 rows of teeth, and 5 teeth in each row: how many teeth has the harrow?

How many are 5 times 5?

9. In that part of the fence which we see in front of the cows there are 5 posts: the distance from one post to the next we call a space, or *length of fence.* How many lengths of fence are there between the 5 posts?

WRITTEN EXERCISES.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Multiply	5	3	9	8	6	7	9	4	6
By	4	5	3	2	4	3	8	3	2
	—	—	—	—	—	—	—	—	—

LESSON XLII.

1. If one apple costs 1 cent, how many cents will 6 apples cost?

How many are 6 times 1? Once 6?

2. Henry paid 2 cents for a pear: how many cents would 6 pears cost, at the same rate?

How many are 6 times 2? Twice 6?

3. Sarah sold 6 oranges at 3 cents apiece: how many cents did she receive for the 6 oranges?

How many are 6 times 3? 3 times 6?

4. What is the cost of 6 lemons at 4 cents for each?

How many are 6 times 4? 4 times 6? 4×6?

Repeat the table: —

6 times 5 are 30	$5 \times 6 = 30$
6 times 6 are 36	$6 \times 6 = 36$
6 times 7 are 42	$7 \times 6 = 42$
6 times 8 are 48	$8 \times 6 = 48$
6 times 9 are 54	$9 \times 6 = 54$
6 times 10 are 60	$10 \times 6 = 60$

Note. — The teacher will name the signs, and explain their use.

5. 3×4? 8×6? 6×3? 5×6?
5×9? 3×5? 4×8? 9×3?

LESSON XLIII.

1. If a cabinet-maker can make one table in a day, how many tables can he make in 7 days?

How many are 7 times 1? Once 7?

2. If one table-drawer has 2 knobs, how many knobs have 7 table-drawers?

How many are 7 times 2? Twice 7?

3. If one clock costs 3 dollars, how many dollars will 7 clocks cost?

7 times 3 are how many? 3 times 7?

4. One chair has 4 legs: how many legs have 7 chairs?

7 times 4 are how many? 4 times 7? 4×7?

Repeat the table: —

7 times 5 are 35	$5 \times 7 = 35$
7 times 6 are 42	$6 \times 7 = 42$
7 times 7 are 49	$7 \times 7 = 49$
7 times 8 are 56	$8 \times 7 = 56$
7 times 9 are 63	$9 \times 7 = 63$
7 times 10 are 70	$10 \times 7 = 70$

5. 7×4? 4×9? 2×9? 6×9?
5×10? 6×6? 4×7? 3×7?

LESSON XLIV.

1. A HUNTER shot 1 bear each time he went out to hunt: how many bears did he shoot in going out 8 times?

How many are 8 times 1? Once 8?

2. One bear has 2 ears: how many ears have 8 bears?

How many are 8 times 2? Twice 8?

3. If a stool has 3 legs, how many legs have 8 stools?

How many are 8 times 3? 3 times 8?

4. If pussy should catch 4 squirrels each day, how many squirrels would she catch in 8 days?

8 times 4 are how many? 4 times 8? 8×4?

Repeat the table: —

8 times 5 are 40	$5 \times 8 = 40$
8 times 6 are 48	$6 \times 8 = 48$
8 times 7 are 56	$7 \times 8 = 56$
8 times 8 are 64	$8 \times 8 = 64$
8 times 9 are 72	$9 \times 8 = 72$
8 times 10 are 80	$10 \times 8 = 80$

LESSON XLV.

1. If a pound of figs costs 1 shilling, how many shillings will 9 pounds cost?

How many are 9 times 1? Once 9?

2. How many figs will 9 trees bear, if each tree bears 2 figs?

How many are 9 times 2? Twice 9?

How many are 9 and 9? 2×9?

3. John caught 4 fishes each time he went to fish: how many did he catch in going 9 times?

9 times 3 are how many? 3 times 9? 3×9? $9 + 9 + 9$?

4. If one pound of fish is worth 4 cents, how many cents are 9 pounds worth?

9 times 4 are how many? 4 times 9?

Repeat the table: —

9 times 5 are 45	$5 \times 9 = 45$
9 times 6 are 54	$6 \times 9 = 54$
9 times 7 are 63	$7 \times 9 = 63$
9 times 8 are 72	$8 \times 9 = 72$
9 times 9 are 81	$9 \times 9 = 81$
9 times 10 are 90	$10 \times 9 = 90$

LESSON XLVI.

1. If every little bird has 1 head, how many heads have 10 little birds?

How many are 10 times 1? Once 10?

2. How many wings have 10 little birds, if each little bird has 2 wings?

How many are 10 times 2? Twice 10?

How many are 10 and 10? $10 + 10$?

3. If these little birds come to your window 3 times every day, how many times will they come in 10 days?

10 times 3 are how many? 3 times 10?

4. If one sheep is worth 4 dollars, how many dollars are 10 sheep worth?

How many are 10 times 4? 4 times 10?

How many are 10 and 10 and 10 and 10?

Repeat the table: —

10 times 6 are 60	$6 \times 10 = 60$
10 times 7 are 70	$7 \times 10 = 70$
10 times 8 are 80	$8 \times 10 = 80$
10 times 9 are 90	$9 \times 10 = 90$
10 times 10 are 100	$10 \times 10 = 100$

5. 6×5? 8×5? 4×4? 7×8? 8×8?
9×7? 10×7? 5×5? 3×8? 6×4?
1×10? 2×8? 3×7? 4×6? 9×9?

How many figures does it take to write one hundred? What are they? How are they placed?

Write two hundred, three hundred, four hundred, five hundred.

LESSON XLVII.

GRANDFATHER and grandmother have a Christmas-party, and are giving presents to the little folks. The Christmas-tree is very pretty, trimmed with flags and streamers, paper lanterns, and bags of candy. It bears something for every one of the children. They all enjoy the party very much. See grandma smile as little Elsie reaches up for the horn of plenty which grandpa is giving to her!

1. How many children do you see at the left of Elsie? How many at the right?

2. If there are 4 children at the left of Elsie, and 9 at the right, how many are there on both sides of her?

How many are 4 and 9? 9 and 4?

3. How many children are there in the picture? Count them?

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

4. If we count grandpa and grandma, how many persons do we see in the picture?

How many are 14 and 2? 2 and 14?

5. If Elsie finds 8 white sugar-plums and 8 red ones in her horn of plenty, how many sugar-plums will she find in it?

How many are 8 and 8? Two times 8?

6. If she finds 8 white sugar-plums, and 8 red ones, and 8 yellow ones, how many will she find in all?

How many are 8 and 8 and 8? 3 times 8?

7. If 7 of these children go home at 7 o'clock, and the rest remain, how many will remain?

7 from 14 leaves how many?

How many are 7 and 7? Twice 7?

8. If the 7 children who go home at 7 o'clock receive 3 bags of candy apiece, how many bags of candy do they all receive?

How many are 7 times 3? 3 times 7?

9. If the 7 children who remain receive 5 presents each, how many presents do they all receive?

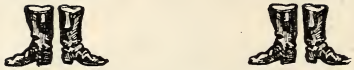
How many are 7 times 5? 5 times 7?

WRITTEN EXERCISES.

Add

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
4	9	5	6	7	9	13	8	6
3	2	6	4	8	6	8	4	5
8	8	4	8	1	5	10	2	3
—	—	—	—	—	—	—	—	—

LESSON XLVIII.



1. It takes 2 boots to make a pair of boots: how many pairs will 4 boots make?

How many times 2 are there in 4?

How many shoes make a pair of shoes?

2. It takes 2 socks to make a pair of socks: how many pairs do 6 socks make?

How many times 2 in 6?

3 times 2 are how many?

3. Here are 8 skates: how many pairs are there?

8 are how many times 2?

4 times 2 are how many?

4. Ten mittens are how many pairs of mittens?

2 in 10 how many times?

5 times 2 are how many?

Repeat the table: —

2 in 2, once	2 in 12, 6 times
2 in 4, twice	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 XLIX.


1. ONE ship has 3 masts: how many ships will 6 masts supply?

3 in 6 how many times? 2 in 6?



2. If 1 stool has 3 legs, how many stools will have 9 legs?

3 in 9 how many times?




3. If a twig has 3 leaves, how many such twigs will have 12 leaves?

How many times 3 are 12?

How many are 4 times 3? 3 times 4?

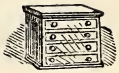
4. There are 3 cherries in 1 cluster: how many such clusters will 15 cherries make?

15 are how many times 3? How many times 5?

Repeat the table: —

3 in 18, 6 times	6 times 3 are 18
3 in 21, 7 times	7 times 3 are 21
3 in 24, 8 times	8 times 3 are 24
3 in 27, 9 times	9 times 3 are 27
3 in 30, 10 times	10 times 3 are 30

LESSON L.

1. In 1 chest there are 4 drawers: how many chests will have 8 drawers?

4 in 8 how many times?



2. If 4 wheels are needed for 1 wagon, how many wagons will 12 wheels furnish?

How many times is 4 contained in 12?

How many are 3 times 4? $4 + 4 + 4$?




3. Sixteen blades will be enough for how many knives, if 4 blades are put in each knife?

4 in 16 how many times?





4. How many forks will together have 20 prongs, if each fork has 4 prongs?

How many times 4 in 20? 5 in 20?

Repeat the table:—

4 in 24, 6 times	4 times 6 are 24
4 in 28, 7 times	4 times 7 are 28
4 in 32, 8 times	4 times 8 are 32
4 in 36, 9 times	4 times 9 are 36
4 in 40, 10 times	4 times 10 are 40

LESSON LI.


1. TEN bottles will furnish how many castors, if each castor has 5 bottles?



2. If 1 bird's nest has 5 eggs, how many birds' nests will have 15 eggs?




3. The boys, when playing, made some rings, or circles, on the ground, and put 5 marbles in each ring. They put down 20 marbles: in how many rings did they place them?





4. Emily found some flowers, and each flower had 5 leaves, or petals. In all, she found 25 petals: how many flowers did she find?

Repeat the table: —

5 in 30, 6 times	$30 \div 5 = 6$
5 in 35, 7 times	$35 \div 5 = 7$
5 in 40, 8 times	$40 \div 5 = 8$
5 in 45, 9 times	$45 \div 5 = 9$
5 in 50, 10 times	$50 \div 5 = 10$

NOTE. — The teacher will explain the signs.

LESSON LII.

WINTER has come. Now for rare sports, — skating, coasting, sleighing! How the snow comes up round the horses' feet! Do you not think those little birds will freeze their toes?

See the boys and the girls, the men and the women, on the ice, and in the sleigh! They look as though they acted on the motto, "Work while you work, and play while you play." Let *us* work a while now, and by-and-by *we* will have *our play.*

1. Here are 2 little birds on the snow: how many times 1 bird?

1 in 2 how many times?

2. Near the centre of the picture we see 6 boys drawing a sled: how many times 2 boys are drawing the sled? How many times 3 boys are drawing the sled?

2 in 6 how many times? 3 in 6?

How many are 3 times 2? 2 times 3?

3. Counting the 2 girls on the sled, there are 8 persons with the sled: how many times 2 persons are with the sled? How many times 4 persons?

2 in 8 how many times? 4 in 8?

How many are 4 times 2? 2 times 4? 4 and 4?

4. Near the right side of the picture we see 5 skaters in one group, and 4 in another: how many skaters in both groups?

How many are 5 and 4? 4 and 5?

How many times 3 in 9?

5. A great way off in the picture we see some birds flying. They are so far off that they look like mere specks. Can you count them?

Twice 5 are how many? 5 and 5?

10 are how many times 5? How many times 2?

6. Beyond the boys who are drawing the sled, we see 8 boys skating. Now, if we count those 8 boys, and the 8 persons with the sled, how many shall we count?

How many are 8 and 8? Twice 8?

16 are how many times 1? 2? 4? 8? 16?

WRITTEN EXERCISES.

	(1)	(2)	(3)	(4)	(5)	(6)
From	264	578	688	692	863	954
Take	193	251	320	70	62	742
	71		368			

7. Farmer Bruce is carrying the scholars home from school. 9 scholars are in the sleigh with him, and 1 more is trying to get in: how many persons are there in the sleigh? If each horse draws the same number of persons, how many does each horse draw?

How many times 5 make 10? How many times 2?

8. If the boy with the satchel on his back gets in, how many people will there then be in the sleigh?

How many are 9 and 1 and 1? 11 — 2?

9. An animal is a creature that lives and breathes and feels. Is a horse an animal? Yes. Why? Because he lives and breathes and feels. Is a man an animal? Yes. Is a bird an animal? Yes. There are 50 animals in the picture: can you count them?

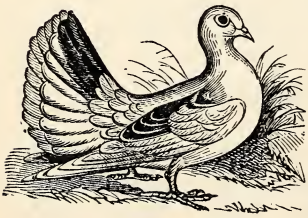
50 are how many times 2? 5? 10? 25? 50?

WRITTEN EXERCISES.

	(1)	(2)	(3)	(4)	(5)	(6)
Divide	6)54	7)49	5)45	4)28	6)60	3)27

LESSON LIII.

1. ALFRED paid 60 cents for 6 doves: what did he pay for 1 dove?



6 in 60 how many times? 10 in 60?

2. When 6 silk hats cost 30 dollars, how many dollars does 1 hat cost?

6 in 30 how many times? 3 in 30?

3. When 1 yard of ribbon costs 6 shillings, how many yards may be bought for 42 shillings?

Repeat the table: —

6 in 30, 5 times	$6 \times 5 = 30$
6 in 36, 6 times	$6 \times 6 = 36$
6 in 42, 7 times	$6 \times 7 = 42$
6 in 48, 8 times	$6 \times 8 = 48$
6 in 54, 9 times	$6 \times 9 = 54$
6 in 60, 10 times	$6 \times 10 = 60$

LESSON LIV.

1. When 1 cluster of grapes costs 7 cents, how many clusters can I buy for 35 cents?

7 in 35 how many times? 5 in 35?

2. If 7 clusters of grapes are worth 63 cents, what is the value of 1 cluster?

7 in 63 how many times? 7 in 49?

How many are 7 times 9? 9 times 7?

3. If 7 gallons of wine are worth 28 dollars, how many dollars is 1 gallon worth?

7 in 28 how many times? 7 in 70?

How many are 10 times 7? 4 times 7?

Repeat the table: —

7 in 7, once	$7 \div 7 = 1$
7 in 14, twice	$14 \div 7 = 2$
7 in 21, 3 times	$21 \div 7 = 3$
7 in 28, 4 times	$28 \div 7 = 4$
7 in 35, 5 times	$35 \div 7 = 5$
7 in 42, 6 times	$42 \div 7 = 6$
7 in 49, 7 times	$49 \div 7 = 7$
7 in 56, 8 times	$56 \div 7 = 8$
7 in 63, 9 times	$63 \div 7 = 9$
7 in 70, 10 times	$70 \div 7 = 10$

4. Count backwards by twos from 60 to 20.

LESSON LV.

1. If it costs 8 dollars to paint a portrait, how many portraits may be painted for 40 dollars?

8 in 40 how many times? 8 in 56?

2. If 8 photographs cost 16 dollars, what is the cost of 1 photograph?

8 in 16 how many times? 2 in 16?

How many are 2 times 8? 9 times 8?

3. If 48 dollars are paid for 8 pairs of ear-rings, what is the price of 1 pair?

8 in 48 how many times? 8 in 80?

How many are 8 times 8? 7 times 8?

Repeat the table: —

8 in 40, 5 times	$40 \div 8 = 5$
8 in 48, 6 times	$48 \div 8 = 6$
8 in 56, 7 times	$56 \div 8 = 7$
8 in 64, 8 times	$64 \div 8 = 8$
8 in 72, 9 times	$72 \div 8 = 9$
8 in 80, 10 times	$80 \div 8 = 10$

WRITTEN EXERCISES.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Multiply	8	9	7	16	15	28	20	12
by	7	5	6	4	8	2	6	5

LESSON LVI.

1. Nine boys have 18 hands: how many hands has 1 boy?

9 in 18 how many times? 2 in 18?

2. Nine boys have 72 fingers: how many fingers has 1 boy.

9 in 72 how many times? 9 in 27?
$72 \div 9 =$ how many? 3×9? $3 + 9$?

3. How many fig-trees will bear 81 pounds of figs, if each tree bears 9 pounds?

9 in 81 how many times? 9 in 90?
How many are $9 + 9$? $18 - 9$?

Repeat the table: —

9 in 45, 5 times	$45 \div 9 = 5$
9 in 54, 6 times	$54 \div 9 = 6$
9 in 63, 7 times	$63 \div 9 = 7$
9 in 72, 8 times	$72 \div 9 = 8$
9 in 81, 9 times	$81 \div 9 = 9$
9 in 90, 10 times	$90 \div 9 = 10$

LESSON LVII.

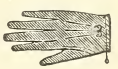
1. If 10 chickens are worth 30 shillings, how many shillings is 1 chicken worth?

10 in 30 how many times? 3 in 30?

2. Ten pounds of poultry are worth 90 cents: what is 1 pound worth?

10 in 90 how many times? 9 in 90?

3. If 10 pairs of gloves cost 80 shillings, how many shillings will pay for 1 pair?



10 in 80 how many times? 10 in 60?
How many are $10 \div 5$? $10 + 5$?

Repeat the table: —

10 in 50, 5 times	$10 \times 5 = 50$
10 in 60, 6 times	$10 \times 6 = 60$
10 in 70, 7 times	$10 \times 7 = 70$
10 in 80, 8 times	$10 \times 8 = 80$
10 in 90, 9 times	$10 \times 9 = 90$
10 in 100, 10 times	$10 \times 10 = 100$

LESSON LVIII.

THIS great ship is almost ready to start on a long voyage across the wide ocean. A great many ships are gone several years on a single voyage. Some of them go round the world, and some go to distant ports, and then return.

This ship, "The Ocean Queen," lies at anchor in deep water, a short distance from the shore; and a great many people have left the shore in small boats to get on board and sail in her.

There is a man standing up in the nearest boat, and waving his handkerchief. Perhaps he is bidding

good-by to his friends on shore. In the next boat there is a flag flying in the wind at the stern of the boat.

1. You may count the folks in the boat where the little flag is flying. How many are there? 10.

How many times 2? How many times 5?

2. In two boats there are twice as many people as in 1: how many are there in 2 boats?

2 times 10 are how many? 10 and 10?

20 are how many times 2? 4? 5? 10?

3. In the nearest boat we see 3 oars, which the sailors are using to row the boat to the ship. They are also using 3 more oars on the other side; but we cannot see them. How many oars are they using?

6 are how many times 3? How many times 2?

4. The boat near the right side of the picture also has 6 oars: how many oars have both boats?

How many are 6 and 6? Twice 6?

12 are how many times 1? 2? 3? 4? 6? 12?

5. In the boat that has the flag, there are 8 oars: how many oars in that boat and the one this side of it?

How many are 8 and 6? 8 less 6?

14 are how many times 2? 7? 14? 1?

6. There are 10 persons in each boat: how many persons are there in 3 boats?

30 are how many times 3? 5? 6? 10?

7. Ten men in each boat: how many in 4 boats?

WRITTEN EXERCISES.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Multiply	10	26	10	18	7	8	9	20
By	9	5	10	5	8	8	7	7
	—	—	—	—	—	—	—	—

How many are 4 times 10? 10 times 4?

40 are how many times 4? 5? 8? 10? 20? 2?

8. If there are 10 men in each boat, how many boats contain 50 men?

50 are how many times 5? 10? 25? 2?

9. If there are 10 men in each boat, how many men are there in 6 boats? in 7 boats? in 8 boats? in 9 boats? in 10 boats?

How many are 10×6? 10×7? 10×8? 10×9? 10×10?

LESSON LIX.

1. How many are 2 and 3? 2 and 5? 2 and 7? 2 and 9?

2. How many are 3 and 4? 3 and 6? 3 and 8? 3 and 10?

3. How many are $4 + 3$? $4 + 4$? $4 + 7$? $4 + 9$?

4. How many are $5 + 2$? $5 + 7$? $5 + 5$? $5 + 10$?

5. How many are 6 and 3? 6 and 6? 6 and 5? 6 and 8?

6. How many are 7 and 1? 7 and 6? 7 and 9? 7 and 10?

7. How many are 8 and 4? 8 and 2? 8 and 6? 8 and 9?

8. How many are $9 + 3$? $9 + 6$? $9 + 4$? $9 + 10$?

9. How many are $10 + 4$? $10 + 6$? $10 + 7$? $10 + 10$?

10. How many are 3 and 5? 4 and 9? 8 and 4? 6 and 10?

11. How many are 7 and 2? 6 and 3? 8 and 1? 5 and 4?

12. How many are 3 and 2 and 7? 4 and 6 and 8? 3 and 7?

13. How many are $4 + 2 + 6 + 2$? $7 + 1 + 5 + 3$?

14. How many are $3 + 2 + 5 + 2$? $4 + 6 + 7 + 2$?

15. How many are 1 and 6 and 5? 9 and 3?

LESSON LX.

1. If 1 orange costs 3 cents, how many cents will 4 oranges cost? *Ans.* 12 cents. Why? *Ans.* 4 oranges will cost 4 times as many cents as 1 orange: therefore, if 1 orange costs 3 cents, 4 oranges will cost 4 times 3 cents, which are 12 cents.

2. If 1 coat is worth 10 dollars, what are 7 coats worth? Why?

3. If Louisa spells 9 words at each lesson, how many words will she spell in 9 lessons? Why?

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

5. How many are $8 - 4$? $9 - 3$? $10 - 7$?

6. One steamboat sails 12 miles in an hour, and another sails 10 miles in an hour: how much farther does one sail than the other? *Ans.* 2 miles. Why? *Ans.* It is just as true that 10 miles taken from 12 miles leaves 2 miles, as that 10 taken from 12 leaves 2.

7. One apple-tree bears 10 barrels of apples, and another only 7 barrels: how many barrels less does one tree bear than the other? Why?

WRITTEN EXERCISES.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Multiply	10	25	13	12	9	17	6	11
By	6	5	5	6	6	7	8	5
	—	—	—	—	—	—	—	—

LESSON LXI.

1. If this pretty nightingale should sing 9 hours to-night, and 7 hours to-morrow night, how many hours would it sing in the two nights?

2. Some blackbirds are sitting on a tree, 10 on one branch, and 10 on another: how many blackbirds are on both branches.

3. Seven boys and 8 girls are playing blindman's-buff: how many children are at play?

4. There are 10 rounds in one ladder, 8 in another, and 9 in another: how many rounds are there in the three ladders?

5. Willie has 10 hens, 6 turkeys, and 8 geese: how many fowls has he?

6. John bought a coat for 10 dollars, a hat for 5 dollars, and a pair of boots for 4 dollars: how many dollars did he pay for all?

7. Mary's writing-book cost 7 cents, and her pen-holder 2 cents: what did both cost?

How many more cents did the writing-book cost than the pen-holder?

8. A farmer sold 5 cows to one man, and 4 to another, and then had 10 remaining: how many cows had he at first? How many more had he remaining than he sold?

9. How many are 10 less 5? 10 less 4? How many are 6 and 4?

10. How many are 7 — 3? 8 — 6? 12 — 4? 10 — 7? 6 — 3? 9 — 8? 9 — 1?

11. How many are 11 — 6? 11 — 5? 9 — 6? 9 — 3? 7 — 5? 7 — 2? 8 — 5? 8 — 3?

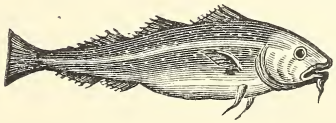
12. 7 from 9 leaves how many? 7 from 11? 7 from 15? 7 from 12? 7 from 18?

13. 8 from 11 leaves how many? 8 from 18? 8 from 16? 8 from 20? 8 from 12?

WRITTEN EXERCISES.

	(1)	(2)	(3)	(4)	(5)	(6)
Add	321	221	38	421	135	222
	278	467	61	543	652	303
	100	711	34	735	212	424

LESSON LXII.



1. ROBERT caught one codfish that weighed 15 pounds, and another that weighed 7 pounds: what did they both weigh? How much did one weigh more than the other?

2. Edwin paid 5 dollars for a plough, 3 dollars for a wheelbarrow, and had 7 dollars left: how many dollars had he at first?

3. Henry had no money; but he sold 5 marbles for 10 cents, and a top for 12 cents, and then he bought a knife for 15 cents: how many cents had he left?

4. Addie found 12 apples under a tree; but she ate 2 of them, and gave 3 to Mary, and 4 to Willie: how many had she then?

5. Four years ago, Willie was 10 years old: how old is he now?

6. Sarah is 13 years old: how old was she 6 years ago?

7. From Andover to Lowell is 9 miles, and from Andover to Lawrence 4 miles: how much farther is it to Lowell than to Lawrence?

8. Albert caught 7 gray squirrels and 6 red squirrels. He lost 5 of the gray ones and 3 of the red ones: how many squirrels had he then?

9. In a bucket there were 20 pounds of sugar; but 6 pounds were used one day, and 5 pounds the next day: how many pounds were left?

10. A horse ate 4 tons of hay; a pair of oxen, 6 tons; and three cows, 5 tons: how many tons did they all eat?

11. Daniel picked 12 quarts of chestnuts; and James, 8 quarts: how many quarts did they both pick?

12. Georgie is now 4 years old: in how many years will he be 10 years old?

13. Mary's father and mother together gave her 13 cents; her father gave her 9 cents: how many cents did her mother give her?

14. Mr. Smith owed me 17 dollars; but he has paid 10 dollars: how many dollars does he still owe me?

15. Two numbers taken together make 14. One of them is 4: what is the other?

16. Three numbers taken together make 17. The first is 8, the second is 4: what is the third?

17. David has 20 marbles. Twelve of them are in his pocket, and the rest in his hand: how many are in his hand?

18. Lucy had 12 cents. She bought a lemon for 4 cents, and an orange for 6 cents, and then found 3 cents: how much money had she then?

19. Copy and write the answer, or state orally: —

70 ÷ 7? 25 ÷ 5? 48 ÷ 6? 49 ÷ 7? 63 ÷ 9?

LESSON LXIII.

1. THE antelope is a beautiful but timid creature. How far would he run in 9 hours, if he ran 10 miles each hour?

2. A sportsman took 45 antelopes in 5 days, taking the same number each day: how many did he take each day?

3. How many lemons, at 3 cents each, can be bought for 15 cents? Why 5? *Ans.* As many times as 3 cents are contained in 15 cents, so many lemons may be bought. 3 cents are contained 5 times in 15 cents: therefore 5 lemons, at 3 cents each, may be bought for 15 cents.

4. How many oranges, at 4 cents each, may be bought for 36 cents? Why?

5. When cloth is worth 5 dollars a yard, how many yards can be bought for 35 dollars? Why?

6. If 28 oranges are divided equally between 7 boys, how many will each boy receive? Why?

7. Julia has 6 pictures, and Emily has 7 times as many: how many has Emily?

8. How many are 8 times 3? 3 times 8? 5 times 7? 7 times 9? 4 times 10?

9. How many are 6 times 9? 9 times 9? 8 times 6? 8 times 8? 8 times 7?

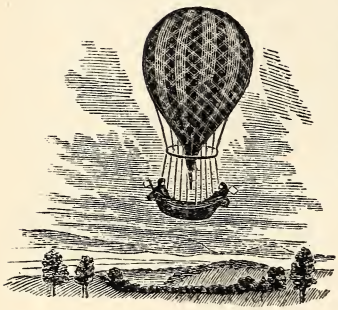
10. How many are 10×5? 6×10? 9×4? 4×9? 8×2? 6×5? 7×6?

11. How many are 5 times 8? 8 times 5? 9 times 8? 10 times 10? 11 times 10?

12. Write and read: —

201, *253*, *416*, *114*, *346*, *517*, *689*.
490, *946*, *715*, *601*, *300*, *849*, *507*.

LESSON LXIV.



1. If 1 balloon will carry up 9 persons, how many balloons will it take to carry up 63 persons? Why?

2. One balloon was up 7 hours at one time, and another was up 6 times as long: how long was the second balloon up? Why?

3. If 2 oranges are worth as much as 4 lemons, how many oranges will pay for 12 lemons?

4. Mr. Holt bought 2 barrels of flour at 10 dollars a barrel, and paid for it with cloth at 4 dollars a yard: how many yards did it take?

5. Arthur bought 4 tops at 6 cents apiece, and paid for them with marbles at 2 cents apiece: how many marbles did it take? Why?

6. How many times 2 in 6? in 10? in 16? in 8? in 20? in 18? in 14?

7. How many times 5 in 15? in 25? in 50? in 35? in 10? in 45?

8. How many are $12 \div 3$? $18 \div 3$? $27 \div 3$? $15 \div 3$? $30 \div 3$? $9 \div 3$? $21 \div 3$?

9. How many times are $48 \div 6$? $24 \div 6$? $60 \div 6$? $6 \div 6$? $54 \div 6$? $36 \div 6$?

10. Twenty are how many times 4? How many times 5? 10? 2? 20? 1?

11. Twenty-four are how many times 6? 3? 8? 4? 12? 2? 24? 1?

12. Thirty are how many times 2? 3? 5? 6? 10? 15?

13. Sixty are how many times 6? 15?

LESSON LXV.

1. If 6 oranges cost 24 cents, how many cents will 8 oranges cost? Why?

2. 6 in 24 how many times? 4 in 24?

3. 8 times 4 are how many? 4 times 8?

4. If a horse travels 15 miles in 3 hours, how far will he travel in 7 hours? Why?

5. If 3 barrels of apples cost 9 dollars, how many barrels may be bought for 15 dollars?

6. How many apples at 2 cents apiece must be given for 8 oranges at 3 cents apiece? Why?

7. 8 times 3 are how many times 2?

8. How many tons of hay at 10 dollars a ton will pay for 5 barrels of flour at 6 dollars a barrel? Why?

9. 6 times 5 are how many times 10?

10. 5 times 3 are how many times 5?

11. 3 times 5 are how many times 3?

12. 5 lemons at 3 cents apiece will pay for how many oranges at 5 cents apiece?

13. 3 oranges at 5 cents apiece will pay for how many lemons at 3 cents apiece?

14. Forty are how many times 8? 4? 10? 5? 2? 20? 40? 1?

15. Thirty are how many times 3? 6? 5? 10? 2? 15? 30? 1?

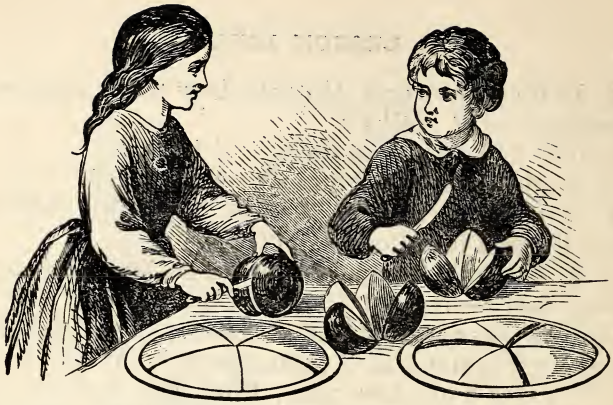
16. Thirty-six are how many times 6? 9? 12? 3? 4? 36? 1?

17. Eighteen are how many times 3? 9? 6? 2? 18? 1?

18. Forty-eight are how many times 6? 12? 4? 8? 48? 1?

19. Count by threes from fifty to eighty. Count backward by threes from eighty to fifty.

20. Count by threes from twenty-one to sixty-six.



LESSON LXVI.

Teacher. Ella is just cutting that nice great apple into two equal parts. What do you call one of the parts?

Pupil. It is *one-half* of an apple.

T. That is right. How many halves of an apple make a whole apple?

P. Two.

T. Right. Suppose it was a *pear* that Ella was cutting into two equal parts, what would one of the parts be?

P. It would be *one-half of a pear.*

T. How many halves of a pear make a whole pear?

P. Two.

T. Do two halves of a *dollar* make a *whole dollar?*

P. Yes. Two halves of *any thing* make the whole of *that thing.*

T. Very well. Arthur has just cut another apple into *three* equal parts. What do you call one of *those* parts?

P. It is *one-third* of an apple.

T. What do you call *two* of the parts?

P. Two of the parts are *two-thirds* of an apple.

T. How many thirds of an apple make a whole apple?

P. Three.

T. Do three thirds of a *pear* make a *whole pear?*

P. They do. Three thirds of *any object* make the whole of *that object.*

T. There is another apple on the middle of the table, which has been cut into *four* equal parts. What are those parts?

P. *One* of the parts is *one-fourth; two* of the parts are *two-fourths; three* of the parts are *three-fourths;* and the *four* parts are *four-fourths* of an apple.

T. How many fourths of an apple make a whole apple?

P. Four. And four fourths of a *pear make a whole pear;* and four fourths of a *dollar*, or *four quarters of a dollar, make a whole dollar.*

T. Very well indeed. On this side of the table there are two loaves of cake. The loaf nearest Ella is cut into *five* equal parts, and we call the parts *fifths: one* part is *one-fifth; two* parts are *two-fifths; three* parts are *three-fifths;* and so on.

The other loaf is cut into *six* equal parts, and the parts are called *sixths.*

WRITTEN EXERCISES.

	(1)	(2)	(3)	(4)	(5)	(6)
Divide	4)36	3)21	8)72	7)49	8)96	8)64
	(7)	(8)	(9)	(10)	(11)	(12)
	9)81	6)144	5)75	7)28	10)100	7)91

LESSON LXVII.

1. When a pie is cut or divided into 7 equal parts, what is one of those parts called?

2. What are *two* of the parts called? *Ans.* Two-sevenths of the pie.

3. What are *five* of the parts called?

4. How many sevenths of a thing make the whole thing? *Ans.* Seven.

5. When a thing is divided into 8 equal parts, what is one of the parts called?

6. What are three of the parts called?

7. How many eighths make a whole one?

8. What is meant by one-ninth of a thing? *Ans.* One of the 9 equal parts into which the thing is divided.

9. What is meant by 7 ninths of a thing? *Ans.* Seven of the 9 equal parts into which the thing is divided.

10. How many ninths make a whole one?

11. What is meant by one-tenth of a thing?

12. How many tenths make a whole one?

13. Mary had 3 tenths of a dollar, and found another tenth: how many tenths of a dollar had she then?

14. 3 tenths and 1 tenth are how many tenths?

15. John planted 2 sevenths of an acre with beans, and 3 sevenths with corn: what part of an acre did he plant with both?

16. Edwin worked 1 fourth of the day in the garden, and 2 fourths in the field: what part of the day did he work in both? How much longer did he work in the field than in the garden?

17. Ezra bought an algebra for 3 fourths of a dollar, and sold it for 2 fourths: did he gain or lose by his bargains? How much?

18. Willie gave 2 eighths of an orange to his sister, and 5 eighths to his brother: what part of the orange did he give away? How much more to his brother than to his sister? What part of the orange did he keep for himself?

19. Two eighths and 5 eighths are how many eighths?

20. Five eighths less 2 eighths are how many eighths?

21. Mr. Hall spent 4 tenths of his life in Boston, and 3 tenths in New York: what part of his life did he spend in the two cities?

22. Mr. Jones spent 1 fifth of his money in one year, and 3 fifths the next year: what part of his money did he spend in 2 years? What part had he then remaining?

23. 1 fifth and 3 fifths are how many fifths?

24. How many fifths remain if 4 fifths are taken from 5 fifths?

25. Mr. Abbott spent 2 sixths of a day in Miss Choate's school, 1 sixth in Miss Fay's, and the remainder of the day in his own: what part of the day was he in his own school?

26. 2 sixths and 1 sixth taken from 6 sixths leave how many sixths?

27. If a box of strawberries cost 3 tenths of a dollar, a pine-apple 2 tenths, and a melon 4 tenths, what part of a dollar did they all cost?

WRITTEN EXERCISES.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Multiply	9	40	14	28	12	24	43	56
by	8	6	5	7	9	3	2	3
	—	—	—	—	—	—	—	—
				196				

LESSON LXVIII.

When any thing is divided into any number of equal parts, what are the parts called?

Ans. Each part is called a *fraction* of the thing that is divided into parts.

We use two numbers to write a fraction: thus we write *one-half* in this way, $\frac{1}{2}$; *one-third* in this way, $\frac{1}{3}$; *two-thirds* in this way, $\frac{2}{3}$; *one-fourth* in this way, $\frac{1}{4}$; *three-fourths* in this way, $\frac{3}{4}$.

In each fraction there are *two numbers*, one over the other, with a line between them. The number *below* the line tells how many equal parts the thing is divided into, and the number *above* the line tells how many of the parts we are talking about.

1. Into how many equal parts is the loaf of cake near Ella divided? *Ans.* 5.

2. What is the *fraction* that stands for one of these 5 parts? *Ans.* $\frac{1}{5}$.

3. What fraction stands for 2 of the parts? *Ans.* $\frac{2}{5}$. For 3 parts? $\frac{3}{5}$. For 4 parts?

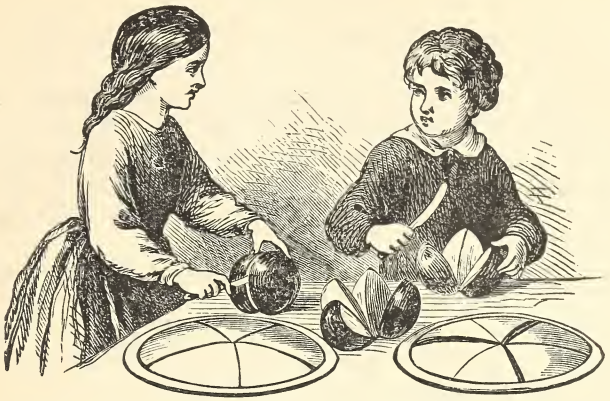
4. If a thing is divided into 6 equal parts, what fraction stands for, or represents, 1 of the parts? *Ans.* $\frac{1}{6}$.

5. What fraction represents 2 of the parts? $\frac{2}{6}$. 3 parts? $\frac{3}{6}$? 4 parts? 5 parts?

6. The apple on the middle of the table was first cut into *two halves*, and then *each half* was cut into *two* equal parts: what is one of these *small* parts? *Ans.* It is $\frac{1}{4}$ of an apple.

7. Then $\frac{1}{2}$ is the same as how many *fourths?* *Ans.* $\frac{1}{2}$ is the same as $\frac{2}{4}$.

8. The cake at the right side of the table was first cut into *three* equal parts, or *thirds*, where you see the large dark lines. Then each of these thirds was



cut into *two* equal parts : so we see that the whole cake is cut into 6 parts, and each part is $\frac{1}{6}$ of the cake. We also see that $\frac{1}{3}$ of the cake is the same as $\frac{2}{6}$ of the cake.

9. Is $\frac{1}{3}$ of a *pear* the same as $\frac{2}{6}$ of a *pear?* *Ans.* It is : $\frac{1}{3}$ of any thing is equal to $\frac{2}{6}$ of the same thing.

WRITTEN EXERCISES.

Add

(1)	(2)	(3)	(4)	(5)
524	296	432	270	714
821	131	256	403	123
330	422	911	516	232

LESSON LXIX.

1. In one apple there are 2 halves : how many halves are there in 3 apples ? Why 6 ? *Ans.* Since there are 2 halves in 1 apple, there are 3 times 2 halves, which are 6 halves, in 3 apples.

2. What fraction represents 6 halves ? *Ans.* $\frac{6}{2}$.

3. How many *fourths* of a dollar in 2 dollars? Why?

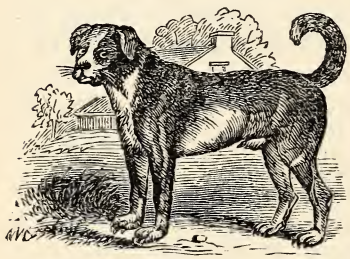
4. How many fourths of an apple in 3 apples? In 4 apples? In 5 apples? In 6 apples? Why?

5. If $\frac{1}{2}$ of a barrel of flour costs 5 dollars, how many dollars do 2 halves, or a whole barrel, cost? Why? *Ans.* Since $\frac{1}{2}$ of a barrel costs 5 dollars, 2 halves cost twice 5 dollars.

6. If $\frac{1}{3}$ of a yard of cloth is worth 2 dollars, what is a whole yard worth? Why?

7. Two is $\frac{1}{3}$ of what number? Why 6? *Ans.* Since 2 is *one* third of the number, *three* thirds, or the whole of the number, will be 3 times 2.

8. Mr. Phillips had 12 sheep in a pasture; but a large dog drove $\frac{1}{3}$ of them out: how many sheep did he drive out? How many thirds of the flock remained in the pasture? How many sheep? How many thirds are $\frac{2}{3}$ less $\frac{1}{3}$?



9. Four is $\frac{1}{3}$ of what number? Why?

10. Eight is $\frac{2}{3}$ of what number? Why? *Ans.* Since 8 is $\frac{2}{3}$, $\frac{1}{2}$ of 8, which is 4, is $\frac{1}{3}$; and, since 4 is $\frac{1}{3}$, $\frac{3}{3}$, or the whole, will be 3 times 4, which are 12.

11. If $\frac{1}{4}$ of a melon costs 5 cents, what will a whole melon cost? Why?

12. 5 is $\frac{1}{4}$ of what number? Why?

13. 4 is $\frac{1}{5}$ of what number? Why?

14. Martha lost 5 cents, which was $\frac{1}{10}$ of all the money she had: how much money had she?

15. 5 is $\frac{1}{10}$ of what number? Why?

16. 10 is $\frac{1}{5}$ of what number? Why?

17. If $\frac{1}{6}$ of an acre of land is worth 9 dollars, what are $\frac{2}{6}$ of an acre worth? Why?

What are $\frac{3}{6}$ worth? $\frac{4}{6}$? $\frac{5}{6}$? $\frac{6}{6}$? Why?

18. 9 is $\frac{1}{6}$ of what number?

19. If 18 is $\frac{2}{6}$ of some number, what is $\frac{1}{6}$ of the same number? Why? What is $\frac{3}{6}$ of the same number? $\frac{4}{6}$? $\frac{5}{6}$? Why?

20. If $\frac{1}{8}$ of a yard of cloth costs 7 cents, what will $\frac{2}{8}$ of a yard cost? $\frac{3}{8}$? $\frac{5}{8}$? $\frac{7}{8}$? A yard? Why?

WRITTEN EXERCISES.

	(1)	(2)	(3)	(4)	(5)	(6)
Multiply	36	14	25	58	75	125
by	4	9	6	5	4	2

	(1)	(2)	(3)	(4)	(5)	(6)
Divide	4)144	9)126	6)150	5)290	4)300	2)250

LESSON LXX.

1. ONE-HALF is equal to how many sixths? *Ans.* *Three* sixths. Why? *Ans.* Since 6 sixths make a whole one, $\frac{1}{2}$ of a whole one will be $\frac{1}{2}$ of 6 sixths, which is 3 sixths.

2. $\frac{1}{2}$ is equal to how many eighths? Why 4 eighths?

3. Change $\frac{2}{4}$ to eighths. *Ans.* First, $\frac{2}{4}$ are the same as $\frac{1}{2}$, and then $\frac{1}{2}$ may be changed to $\frac{4}{8}$: therefore $\frac{2}{4}$ are the same as $\frac{4}{8}$.

4. Change $\frac{3}{6}$ to tenths. Why $\frac{5}{10}$?

5. Change $\frac{4}{6}$ to thirds. *Ans.* $\frac{4}{6} = \frac{2}{3}$. Why? *Ans.* $\frac{1}{3}$ is the same as $\frac{2}{6}$; but $\frac{2}{6}$ is contained in $\frac{4}{6}$ just as many times as 2 is contained in 4, which is 2 times: therefore $\frac{4}{6}$ is equal to 2 times $\frac{1}{3}$, which are $\frac{2}{3}$.

6. Change $\frac{8}{12}$ to thirds. To sixths.

7. Change $\frac{9}{12}$ to fourths. *Ans.* $\frac{9}{12} = \frac{3}{4}$.

8. Change $\frac{9}{12}$ to eighths. *Ans.* First $\frac{9}{12} = \frac{3}{4}$, and then $\frac{3}{4} = \frac{6}{8}$: therefore $\frac{9}{12} = \frac{6}{8}$.

9. Mr. Low worked $\frac{9}{12}$ of a day for me: how many fourths of a day did he work? How many eighths? Why?

10. I paid Mr. Low 9 shillings for $\frac{9}{12}$ of a day's work: what did I pay him for $\frac{1}{12}$ of a day? What for $\frac{1}{4}$ of a day? What for $\frac{1}{2}$ of a day? Why?

11. Count by fours from one to thirty-seven. From forty to eighty. By fives from five to fifty. From forty-eight to ninety-eight.

LESSON LXXI.

1. SIX halves of an apple are the same as how many whole apples? Why 3?

Ans. Since 2 halves of an apple make a whole apple, there will be as many whole apples as the number of times 2 halves are contained in 6 halves, which is 3.

2. How many dollars in 4 halves of a dollar?

3. What *fraction* represents 4 halves? *Ans.* $\frac{4}{2}$.

4. In $\frac{8}{2}$ how many whole ones? *Ans.* $\frac{8}{2} = 4$ whole ones.

5. In $\frac{12}{3}$ of an apple, how many apples?

6. In $\frac{10}{5}$ of a cake, how many cakes? Why?

7. In $\frac{18}{6}$ of a cake, how many cakes? Why?

8. Four whole ones are how many sixths?

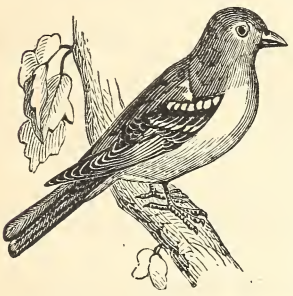
9. In 2 whole apples and $\frac{1}{4}$ of another apple, how many fourths of an apple? Why 9? *Ans.* In 2 apples there are $\frac{8}{4}$ of an apple, and $\frac{1}{4}$ put with $\frac{8}{4}$ gives $\frac{9}{4}$.

10. How shall two and one-fourth be written in *figures?* *Ans.* $2\frac{1}{4}$.

11. In $3\frac{2}{5}$ oranges, how many fifths of an orange? *Ans.* $3\frac{2}{5}$ oranges $= 1\frac{7}{5}$ of an orange.

12. At 10 dollars a barrel, what is $\frac{1}{5}$ of a barrel of flour worth? $\frac{2}{5}$? $\frac{3}{5}$? $1\frac{1}{5}$? 2? $2\frac{3}{5}$?

13. If this pretty bird should sing by your window $\frac{1}{2}$ hour every day for 8 days, how many hours would it sing by your window?



14. If it should sing $\frac{1}{2}$ hour every day for 9 days, how many hours would that be? *Ans.* $4\frac{1}{2}$ hours.

15. If $\frac{1}{2}$ of a bushel of oats is worth $\frac{1}{4}$ of a dollar, what is 1 bushel worth? What are 2 bushels worth? $2\frac{1}{2}$ bushels?

16. Change $4\frac{3}{5}$ to fifths. *Ans.* $\frac{23}{5}$.

17. Change $3\frac{2}{7}$ to sevenths.

18. Change $\frac{15}{3}$ to whole ones. *Ans.* 5.

19. Change $\frac{18}{6}$ to whole ones.

20. Change $2\frac{3}{4}$ to whole ones. *Ans.* $5\frac{3}{4}$.

21. Change $\frac{17}{3}$ to whole ones.

22. How many are $\frac{3}{12}$, $\frac{2}{12}$, $\frac{4}{12}$, and $\frac{1}{12}$? *Ans.* $\frac{10}{12} = \frac{5}{6}$.

23. How many are $\frac{2}{7}$, $\frac{2}{7}$, $\frac{4}{7}$, and $\frac{5}{7}$? *Ans.* $\frac{14}{7} = 2$.

24. How many are $\frac{9}{15}$ less $\frac{5}{15}$? $\frac{8}{15} - \frac{6}{15}$?

25. How many are $\frac{7}{11}$ and $\frac{2}{11}$? $\frac{7}{11} + \frac{3}{11}$?

26. How many are 3 times $\frac{2}{13}$? *Ans.* $\frac{6}{13}$.

27. How many are 5 times $\frac{2}{17}$? $\frac{2}{17} \times 4$?

28. How many are one-half of $\frac{10}{13}$? *Ans.* $\frac{5}{13}$.

29. How many are $\frac{1}{3}$ of $\frac{15}{12}$? $\frac{15}{12} \div 5$?

30. How many are $\frac{1}{4}$ of $\frac{16}{15}$? *Ans.* $\frac{4}{15}$.

31. How many are $\frac{1}{5}$ of $\frac{15}{12}$?

32. Count by fives from thirty-two to seventy-two. Count backward by fives from eighty.

LESSON LXXII.

1. JAMES has 3 sisters, and Charles has 6: how many have they both?

2. Mr. Abbott paid 7 dollars for a pair of boots, and 37 dollars for an overcoat: how much did he pay in all?

3. A man paid 45 dollars for a stove, and 9 dollars for wood: how much did he pay for both?

4. Paid 9 dollars for a ton of coal, 8 dollars for a barrel of flour, and 5 dollars for a cord of wood: how much did I pay in all?

5. George walked 7 miles one day, 8 miles the next, 9 miles the next, and 10 miles the next: how many miles did he walk?

6. William earned 4 dollars in January, 6 dollars in February, 9 dollars in March, and 5 dollars in April: how much did he earn?

7. How many are 8 and 5? 18 and 5? 28 and 5? 38 and 5? 48 and 5? 58 and 5? 68 and 5? 78 and 5? 88 and 5? 98 and 5?

8. How many are 13 and 8? 23 and 8? 33 and 8? 43 and 8? 53 and 8? 63 and 8? 73 and 8? 83 and 8? 93 and 8?

9. How many are 27 and 9? 37 and 9? 47 and 9? 57 and 9? 67 and 9? 97 and 9?

10. Count by fours from 47 to 107. Count by fives from 53 to 103.

WRITTEN EXERCISES.

1. One field contains 8 acres, and another 79 acres: how many acres are there in both?

2. If one house has 32 windows, another 27 windows, and another 18 windows, how many windows have the three houses?

3. Thomas has 20 books, George has 19 books, Joseph has 15 books, and Daniel has 12 books: how many books have they all?

4. In one school there are 113 scholars, and in another 214: how many scholars are there in both?

5. Mr. Adams paid 202 dollars for a horse, 57 dollars for a cow, and 74 dollars for some sheep: how much did he pay for all?

6. July has 31 days, August 31 days, September 30 days, October 31, November 30, and December 31 days: how many days have these six months?

7. On one tree were 17 pears, on another 426, on another 302, and on another 213: how many pears were they?

8. One farmer has 643 sheep, another has 529, and another has 375: how many have they all?

9. Mr. Atwood has 393 dollars in the bank, Mr. Jones has 539 dollars, and Mr. Johnson has 615 dollars: how much have they in the bank?

10. A locomotive went 118 miles one day, 197 another, 236 another, and 183 another: how far did it go?

Write and add: —

(11)	(12)	(13)	(14)	(15)	(16)	(17)
7	*7*	*5*	*1*	*11*	*14*	*19*
7	*4*	*5*	*8*	*4*	*13*	*12*
7	*3*	*5*	*7*	*17*	*9*	*17*
7	*8*	*5*	*4*	*21*	*18*	*16*
7	*2*	*5*	*2*	*16*	*17*	*15*

(18)	(19)	(20)	(21)	(22)
123	*217*	*412*	*823*	*942*
246	*304*	*335*	*101*	*216*
970	*851*	*279*	*87*	*175*

LESSON LXXIII.

1. A BOY bought a sled for 8 dollars, and sold it afterwards for 5 dollars: how much did he lose?

2. In one class there are 13 scholars, and in another 8: how many are there in both? How many more in the first than in the second?

3. John worked 19 hours; but his brother only 8: how much longer did John work than his brother?

4. Frederic had 28 marbles, but gave his sister 7: how many had he left?

5. Henry had 15 pigeons; but he gave away 5, and 7 flew away: how many had he remaining?

6. One day William bought 13 apples, another day 4 plums, and another day 5 plums: how many more apples did he buy than plums?

7. How many are 11 less 4? 21 less 4? 31 less 4? 41 less 4? 51 less 4? 61 less 4? 71 less 4? 81 less 4? 91 less 4? 101 less 4?

8. How many are 14 less 7? 24 less 7? 34 less 7? 44 less 7? 54 less 7? 64 less 7? 74 less 7? 84 less 7? 94 less 7? 104 less 7?

9. Count backward, by threes, from 97. Count backward, by fours, from 99 to 39.

WRITTEN EXERCISES.

1. James has 25 dollars, and Arthur has 15 dollars: how much have they together? How much more has James than Arthur?

2. One book has 76 pages, and another 34 pages: how many more has the first than the second?

3. One railroad is 456 miles long, another is 369 miles long: how much longer is the one than the other?

4. A farmer paid 567 dollars for some cows, and sold them for 436 dollars: how much did he lose?

5. I had 987 dollars, but gave a friend 98 dollars: how much had I remaining?

6. A bridge was 275 feet long; but the river was only 84 feet wide: how much greater was the length of the bridge than the width of the river?

7. A farm was sold for 863 dollars, which cost 707 dollars: how many dollars were gained by the sale?

8. Robert found 278 chestnuts, Walter 107, and Edward 120: how many more did Robert find than Walter and Edward together?

9. Alice went to school 233 days, and Mary 171: how much longer did Alice go than Mary?

Write and subtract: —

10. *42 — 18*
11. *25 — 13*
12. *76 — 17*
13. *43 — 22*
14. *87 — 25*
15. *134 — 96*
16. *215 — 20*
17. *187 — 122*
18. *346 — 24*
19. *534 — 362*

(20)	(21)	(22)	(23)	(24)	(25)
876	*978*	*712*	*297*	*632*	*904*
21	*246*	*305*	*146*	*410*	*723*

(26)	(27)	(28)	(29)	(30)	(31)
123	*532*	*896*	*398*	*409*	*888*
111	*223*	*347*	*287*	*128*	*679*

(32)	(33)	(34)	(35)	(36)	(37)
946	*571*	*745*	*483*	*959*	*1061*
194	*280*	*639*	*247*	*564*	*847*

(38)	(39)	(40)	(41)	(42)
2446	*9673*	*1785*	*8571*	*9184*
2154	*7805*	*1749*	*5908*	*6775*

LESSON LXXIV.

1. If a wheel revolves 8 times in a minute, how many times will it revolve in 9 minutes?

2. Paid 10 dollars for a stove: how much must I pay for 7 stoves?

3. In an orchard there are 8 trees in a row: how many trees are there in 6 rows?

4. A boy earned 9 dollars a month: how much did he earn in 6 months?

5. How many pairs of boots at 6 dollars a pair will pay for 9 barrels of flour at 8 dollars a barrel?

6. If a pair of skates costs 3 dollars, how much will 12 pairs cost?

7. How many are 9 times 8? 5 times 3? 12 times 5? 11 times 6? 4 times 10? 9 times 7? 8 times 4? 6 times 5? 10 times 6?

8. How many are 8×8? 9×1? 7×7? 12×6? 10×8? 6×6? 10×2? 7×3? 9×5? 4×4?

9. How many are 5×4? 6×9? 8×5? 9×3? 7×4? 9×10? 10×5? 11×5? 12×5?

10. How many are 3×10? 3×11? 3×12? 4×10? 4×11? 4×12? 9×9?

11. How many are 12×2? 12×4? 12×7? 12×8? 12×9? 12×10? 12×11? 12×12?

WRITTEN EXERCISES.

1. A certain house has 43 windows: how many windows would 5 such houses have?

2. If Henry picks 127 apples in an hour, how many can he pick in 9 hours?

3. If a steamer can go 258 miles in a day, how far can it go in 3 days?

4. Mr. Holt bought 6 horses, paying 127 dollars for each: he sold them all afterwards for 735 dollars: how much did he lose?

5. In a certain town there are 306 voters: how many would there be in 20 such towns?

6. If a window contains 12 panes of glass, how many panes will 108 windows contain?

7. If one train has 43 cars, how many cars would 18 trains have?

8. A merchant bought 27 bushels of potatoes at 96 cents a bushel, and paid for them with sugar at 8 cents a pound: how many pounds did it take?

9. One merchant bought 74 pounds of figs at 22 cents a pound, and another bought 68 pounds at 23 cents a pound: how much did all the figs cost?

10. If a man earns 963 dollars in a year, how much would he earn in 24 years?

Write and multiply: —

	(11)	(12)	(13)	(14)	(15)	(16)	(17)
Multiply	12	91	14	53	61	42	92
By	3	9	2	3	8	4	2

(18)	(19)	(20)	(21)	(22)	(23)	(24)
321	213	132	222	101	211	133
3	2	3	4	6	7	3

(25)	(26)	(27)	(28)	(29)	(30)	(31)
524	837	296	987	305	750	908
6	5	8	4	9	8	7

(32)	(33)	(34)	(35)	(36)	(37)	(38)
811	234	888	765	542	602	312
12	18	22	30	31	40	14

(39)	(40)	(41)	(42)	(43)	(44)	(45)
76	89	93	51	64	47	36
32	47	26	19	55	28	32

LESSON LXXV.

1. If a hat costs 2 dollars, how many hats can I buy with 14 dollars?

2. If oranges cost 3 cents each, how many can I buy with 18 cents?

3. A school of 24 scholars has 4 equal divisions: how many scholars in each division?

4. If I set out 40 plants in 5 rows, how many plants will there be in each row?

5. If I wish to read 36 pages, and can read 6 pages an hour, in how many hours will I be able to read them?

6. If you divide 35 bushels of wheat among 7 poor families, how many bushels would each family receive?

7. How many are $16 \div 4$? $20 \div 5$? $40 \div 2$? $21 \div 3$? $72 \div 8$? $49 \div 7$? $27 \div 3$?

8. How many are $81 \div 9$? $70 \div 7$? $66 \div 6$? $55 \div 5$? $63 \div 7$? $32 \div 4$?

9. Forty-eight are how many times 8? 4? 6? 12? 3?

10. Seventy-two are how many times 12? 9? 6? 4? 3? 2? 8?

WRITTEN EXERCISES.

1. How many panes of glass in each window, if 12 windows have 72 panes?

2. How many garments can be made from 102 yards of cloth, if each garment requires 6 yards?

3. A man gave 648 dollars to be divided equally among his 4 children: how much did each receive?

4. John received 64 cents from his mother, 86 from his father, and 58 from his aunt. If tops cost 8 cents apiece, how many could he buy with this money?

5. A boy having 217 chestnuts gave 63 to his

mother, and divided the rest among his 14 playmates: how many did each receive?

6. If a train goes 19 miles in an hour, how long will it take for it to go 95 miles?

7. A man bought a farm containing 23 acres for 276 dollars: how much did an acre cost?

8. How many plants can I buy with 40 cents, if each plant costs 5 cents?

9. In how many hours will a steamer go 918 miles, if it goes 9 miles in an hour?

10. If I have 108 dollars, how many coats can I buy at 6 dollars apiece? At 9 dollars apiece? At 12 dollars apiece?

11. A man worked 18 months, and earned 306 dollars: how much did he receive a month?

12. If I have 84 cents, how many pounds of sugar can I buy at 6 cents a pound? At 7 cents? At 12 cents?

(13)	(14)	(15)	(16)	(17)
2)76	5)85	9)99	3)57	7)84
(18)	(19)	(20)	(21)	(22)
6)96	8)176	5)685	2)974	9)837
(23)	(24)	(25)	(26)	(27)
4)808	7)861	6)840	3)516	8)864
(28)	(29)	(30)	(31)	(32)
15)60	12)96	13)65	14)42	13)91
(33)	(34)	(35)	(36)	(37)
15)450(	13)403(	19)836(	16)368(	11)616(
(38)	(39)	(40)	(41)	(42)
21)294(	24)312(	25)300(	18)486(	23)529(

LESSON LXXVI.

REPEAT the following tables: —

UNITED-STATES MONEY.

10 Mills (m.)	make	1 Cent,	marked	c.
10 Cents	"	1 Dime,	"	d.
10 Dimes	"	1 Dollar,	"	$
10 Dollars	"	1 Eagle	"	e.

ENGLISH MONEY.

4 Farthings (qr.)	make	1 Penny,	d.
12 Pence	"	1 Shilling,	s.
20 Shillings	"	1 Pound,	£

TROY WEIGHT.

24 Grains (gr.)	make	1 Pennyweight,	dwt.
20 Pennyweights	"	1 Ounce,	oz.
12 Ounces	"	1 Pound,	lb.

APOTHECARIES' WEIGHT.

20 Grains (gr.)	make	1 Scruple	℈
3 Scruples	"	1 Dram,	ʒ
8 Drams	"	1 Ounce,	℥
12 Ounces	"	1 Pound,	lb.

AVOIRDUPOIS WEIGHT.

16 Ounces	make	1 Pound,	lb.
25 Pounds	"	1 Quarter,	qr.
4 Quarters	"	1 Hundred Weight,	cwt.
20 Hund. Weight	"	1 Ton,	t.

LONG MEASURE.

12	Inches (in.)	make 1 Foot,	ft.
3	Feet	" 1 Yard,	yd.
$5\frac{1}{2}$	Yards, or $16\frac{1}{2}$ Feet,	" 1 Rod,	rd.
40	Rods	" 1 Furlong,	fur.
8	Furlongs	" 1 Mile,	m.

LIQUID MEASURE.

4	Gills (gi.)	make 1 Pint,	pt.
2	Pints	" 1 Quart,	qt.
4	Quarts	" 1 Gallon,	gal.

DRY MEASURE.

2	Pints (pt.)	make 1 Quart,	qt.
8	Quarts	" 1 Peck,	pk.
4	Pecks	" 1 Bushel,	bush.

TIME.

60	Seconds (sec.)	make 1 Minute,	m.
60	Minutes	" 1 Hour,	h.
24	Hours	" 1 Day,	d.
365	Days	" 1 Common Year.	
366	Days	" 1 Leap Year.	

METRIC SYSTEM.

MEASURES OF WEIGHT.

10 Centigrams	make	1 Decigram.
10 Decigrams	"	1 Gram.
10 Grams	"	1 Dekagram.
10 Dekagrams	"	1 Hectogram.

MEASURES OF LENGTH.

10 Centimeters	make	1 Decimeter.
10 Decimeters	"	1 Meter.
10 Meters	"	1 Dekameter.
10 Dekameters	"	1 Hectometer.

MEASURES OF CAPACITY.

10 Centiliters	make	1 Deciliter.
10 Deciliters	"	1 Liter.
10 Liters	"	1 Dekaliter.
10 Dekaliters	"	1 Hectoliter.

MULTIPLICATION TABLE.

Once	1	is	1	2	times	1	are	2
"	2	"	2	2	"	2	"	4
"	3	"	3	2	"	3	"	6
"	4	"	4	2	"	4	"	8
"	5	"	5	2	"	5	"	10
"	6	"	6	2	"	6	"	12
"	7	"	7	2	"	7	"	14
"	8	"	8	2	"	8	"	16
"	9	"	9	2	"	9	"	18
"	10	"	10	2	"	10	"	20
"	11	"	11	2	"	11	"	22
"	12	"	12	2	"	12	"	24
3	times	1	are 3	4	times	1	are	4
3	"	2	" 6	4	"	2	"	8
3	"	3	" 9	4	"	3	"	12
3	"	4	" 12	4	"	4	"	16
3	"	5	" 15	4	"	5	"	20
3	"	6	" 18	4	"	6	"	24
3	"	7	" 21	4	"	7	"	28
3	"	8	" 24	4	"	8	"	32
3	"	9	" 27	4	"	9	"	36
3	"	10	" 30	4	"	10	"	40
3	"	11	" 33	4	"	11	"	44
3	"	12	" 36	4	"	12	"	48
5	times	1	are 5	6	times	1	are	6
5	"	2	" 10	6	"	2	"	12
5	"	3	" 15	6	"	3	"	18
5	"	4	" 20	6	"	4	"	24
5	"	5	" 25	6	"	5	"	30
5	"	6	" 30	6	"	6	"	36
5	"	7	" 35	6	"	7	"	42
5	"	8	" 40	6	"	8	"	48
5	"	9	" 45	6	"	9	"	54
5	"	10	" 50	6	"	10	"	60
5	"	11	" 55	6	"	11	"	66
5	"	12	" 60	6	"	12	"	72

MULTIPLICATION TABLE.

7	times	1	are	7		8	times	1	are	8
7	"	2	"	14		8	"	2	"	16
7	"	3	"	21		8	"	3	"	24
7	"	4	"	28		8	"	4	"	32
7	"	5	"	35		8	"	5	"	40
7	"	6	"	42		8	"	6	"	48
7	"	7	"	49		8	"	7	"	56
7	"	8	"	56		8	"	8	"	64
7	"	9	"	63		8	"	9	"	72
7	"	10	"	70		8	"	10	"	80
7	"	11	"	77		8	"	11	"	88
7	"	12	"	84		8	"	12	"	96
9	times	1	are	9		10	times	1	are	10
9	"	2	"	18		10	"	2	"	20
9	"	3	"	27		10	"	3	"	30
9	"	4	"	36		10	"	4	"	40
9	"	5	"	45		10	"	5	"	50
9	"	6	"	54		10	"	6	"	60
9	"	7	"	63		10	"	7	"	70
9	"	8	"	72		10	"	8	"	80
9	"	9	"	81		10	"	9	"	90
9	"	10	"	90		10	"	10	"	100
9	"	11	"	99		10	"	11	"	110
9	"	12	"	108		10	"	12	"	120
11	times	1	are	11		12	times	1	are	12
11	"	2	"	22		12	"	2	"	24
11	"	3	"	33		12	"	3	"	36
11	"	4	"	44		12	"	4	"	48
11	"	5	"	55		12	"	5	"	60
11	"	6	"	66		12	"	6	"	72
11	"	7	"	77		12	"	7	"	84
11	"	8	"	88		12	"	8	"	96
11	"	9	"	99		12	"	9	"	108
11	"	10	"	110		12	"	10	"	120
11	"	11	"	121		12	"	11	"	132
11	"	12	"	132		12	"	12	"	144

TABLES FOR REVIEW.

The following tables may be used to advantage as an accompanying exercise to the lessons in the earlier part of the book. They should be dwelt upon till the pupil can correctly recite them as fast as he can read.

ADDITION.

The use of these tables may be extended by reading each line quite across the page; as, 4 and 2 and 10 and 5, and so on, and giving the sum of the numbers in the line.

I.	II.	III.	IV.
	How many are		
4 and 2	10 and 5	5 and 5	10 and 10
9 and 4	9 and 6	4 and 4	11 and 4
5 and 6	8 and 1	4 and 8	6 and 11
3 and 2	6 and 6	7 and 5	5 and 12
4 and 7	10 and 8	2 and 2	3 and 13
9 and 5	9 and 9	10 and 9	11 and 5
10 and 1	5 and 4	11 and 2	14 and 6
7 and 6	10 and 2	4 and 3	3 and 14
8 and 7	8 and 3	8 and 8	13 and 5
5 and 2	3 and 2	9 and 8	11 and 9
9 and 8	9 and 3	12 and 3	5 and 14
6 and 3	7 and 9	3 and 3	12 and 6

V.	VI.	VII.
	How many are	
1 and 2 and 3	4 and 5 and 7	11 and 4 and 5
2 and 4 and 1	3 and 8 and 6	5 and 4 and 8
3 and 2 and 4	9 and 3 and 5	7 and 10 and 7
6 and 3 and 5	10 and 2 and 8	12 and 5 and 6
9 and 1 and 6	6 and 7 and 9	4 and 5 and 8
8 and 7 and 5	3 and 10 and 2	6 and 10 and 9
1 and 8 and 8	11 and 1 and 6	9 and 11 and 5
2 and 10 and 1	5 and 6 and 4	8 and 9 and 9
7 and 8 and 6	10 and 5 and 5	3 and 6 and 2
4 and 3 and 7	12 and 3 and 4	13 and 3 and 6
8 and 5 and 3	6 and 2 and 5	10 and 10 and 11
9 and 6 and 7	3 and 7 and 9	12 and 2 and 8

TABLES FOR REVIEW.

SUBTRACTION.

The following tables can also be made tables in Addition by directing the pupil to substitute the word "and" in each case for the words "from" and "less."

I.	II.	III.	IV.
2 from 6	7 from 9	3 from 7	9 from 14
9 from 13	5 from 12	6 from 14	6 from 15
6 from 9	3 from 10	2 from 9	3 from 8
8 from 13	4 from 9	7 from 13	8 from 16
10 from 14	3 from 12	9 from 17	5 from 13
2 from 8	4 from 8	4 from 6	3 from 6
6 from 11	9 from 11	7 from 14	10 from 16
7 from 16	4 from 13	3 from 11	7 from 11
5 from 8	9 from 18	4 from 12	6 from 13
9 from 15	2 from 11	9 from 16	5 from 9
7 from 12	10 from 19	3 from 9	7 from 15
5 from 10	8 from 8	8 from 9	6 from 10

ADDITION AND SUBTRACTION.

I.	II.	III.
4 and 7 less 2	10 and 6 less 8	12 and 5 less 6
8 and 9 less 6	14 and 2 less 3	5 and 5 less 4
7 and 3 less 5	6 and 4 less 5	7 and 7 less 10
8 and 7 less 10	3 and 11 less 7	14 and 7 less 1
4 and 2 less 3	4 and 13 less 8	11 and 3 less 4
10 and 7 less 6	7 and 9 less 8	3 and 3 less 2
4 and 9 less 7	10 and 7 less 2	5 and 8 less 6
4 and 11 less 6	4 and 4 less 3	14 and 8 less 7
7 and 10 less 3	9 and 1 less 10	7 and 7 less 5
3 and 7 less 8	4 and 9 less 8	12 and 2 less 3
10 and 10 less 7	9 and 9 less 3	6 and 10 less 4

TABLES FOR REVIEW.

MULTIPLICATION.

These tables may be converted into lessons in Addition by substituting the word "and" for "times," or into lessons in Subtraction by substituting the word "less" for "times," the pupil naming the larger number first.

I.	II.	III.	IV.
2 times 4	3 times 7	7 times 10	3 times 8
8 times 9	5 times 6	5 times 7	2 times 6
5 times 5	6 times 8	3 times 4	7 times 8
4 times 4	8 times 10	2 times 7	5 times 10
7 times 9	4 times 5	3 times 3	4 times 7
2 times 2	2 times 8	6 times 10	2 times 5
7 times 7	3 times 2	2 times 9	4 times 8
4 times 10	9 times 3	4 times 6	3 times 10
5 times 8	6 times 7	8 times 8	4 times 4
3 times 6	9 times 6	9 times 10	3 times 7
6 times 6	9 times 4	8 times 7	8 times 6

The Multiplication table of 11 and 12 is here inserted, to be learned after the table as far as 10 has been learned in a previous part of the book. The pupil should learn to recite it as it is written, as "6 times 11," and then reverse the order of the figures, as "11 times 6," and so on.

I.	II.	III.
Once 11 is 11	Once 12 is 12	2 times 11
2 times 11 are 22	2 times 12 are 24	3 times 12
3 times 11 are 33	3 times 12 are 36	12 times 2
4 times 11 are 44	4 times 12 are 48	8 times 11
5 times 11 are 55	5 times 12 are 60	6 times 12
6 times 11 are 66	6 times 12 are 72	12 times 4
7 times 11 are 77	7 times 12 are 84	5 times 11
8 times 11 are 88	8 times 12 are 96	11 times 7
9 times 11 are 99	9 times 12 are 108	10 times 3
10 times 11 are 110	10 times 12 are 120	6 times 11
11 times 11 are 121	11 times 12 are 132	7 times 12
12 times 11 are 132	12 times 12 are 144	8 times 12

TABLES FOR REVIEW.

DIVISION.

These tables may be converted into Addition and Subtraction by substituting the word "and" or "from" for "in."

I.	II.	III.	IV.
4 in 20	3 in 12	9 in 63	9 in 72
8 in 80	2 in 14	6 in 18	10 in 100
6 in 36	3 in 9	9 in 36	8 in 56
1 in 8	6 in 60	10 in 70	10 in 50
6 in 54	2 in 18	3 in 24	7 in 28
2 in 8	8 in 64	7 in 56	9 in 45
8 in 72	9 in 90	4 in 28	7 in 14
5 in 25	3 in 15	2 in 10	8 in 48
7 in 63	9 in 81	3 in 30	7 in 42
3 in 18	5 in 30	5 in 45	9 in 27
5 in 40	6 in 42	7 in 70	9 in 54
4 in 36	3 in 27	5 in 35	9 in 72

The Division table of 11 and 12 is here inserted, to be learned after the table as far as 10 has been completed in the previous part of the book. Each question should be recited as it stands, and then the order reversed, as "11 in 66," then "6 in 66."

I.	II.	III.
11 in 11, once.	12 in 12, once.	12 in 72
11 in 22, 2 times.	12 in 24, 2 times.	11 in 66
11 in 33, 3 times.	12 in 36, 3 times.	11 in 44
11 in 44, 4 times.	12 in 48, 4 times.	12 in 60
11 in 55, 5 times.	12 in 60, 5 times.	12 in 24
11 in 66, 6 times.	12 in 72, 6 times.	2 in 24
11 in 77, 7 times.	12 in 84, 7 times.	11 in 77
11 in 88, 8 times.	12 in 96, 8 times.	12 in 96
11 in 99, 9 times.	12 in 108, 9 times.	12 in 132
11 in 110, 10 times.	12 in 120, 10 times.	11 in 132
11 in 121, 11 times.	12 in 132, 11 times.	12 in 144
11 in 132, 12 times.	12 in 144, 12 times.	11 in 22