## THE NUMBER TEN

| | | | | | | |
|---|---|---|---|---|---|---|
| 10 = | 1 | 2 | 3 | 4 | 5 | Ten 1's |
| | 9 | 8 | 7 | 6 | 5 | Five 2's |
| | | | | | | Two 5's |

1. Show with blocks the combinations of 10:

4 blocks + 6 blocks = ? 10 blocks − 5 blocks = ?
9 blocks + 1 block = ? 10 blocks − 8 blocks = ?
3 blocks + 7 blocks = ? 10 blocks − 6 blocks = ?

2. Count to 10 by 1's; by 2's.

3. Add:

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 2 | 4 | 3 | 3 | 9 | 6 | 5 | 1 | 8 | 7 |
| 8 | 6 | 5 | 7 | 1 | 4 | 5 | 9 | 2 | 3 |

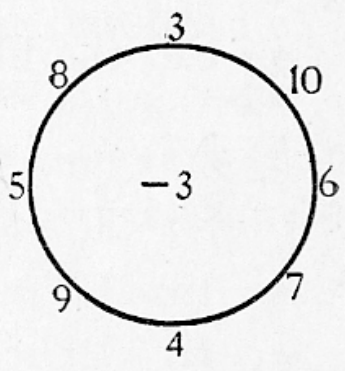
4. From 10 take 3; take 5; 7; 8; 4; 2; 9; 6; 1.

5. Arrange 10 blocks in two equal groups. How many blocks are there in each group? $2 \times 5$ blocks = ?

6. Name the piece of money that has the same value as ten pennies. **10 cents equal one dime.**

7. How many nickels equal 1 dime?

8. Find the cost of 2 oranges at 5 cents each.




9. 2 in 10, — times. 5 in 10, — times.
4 in 10, — times and — over.

10. Take the number in the center from each number outside the circle.

## THE NUMBER ELEVEN

| | | | | | | |
|---|---|---|---|---|---|---|
| 11 = | 1 | 2 | 3 | 4 | 5 | Eleven 1's |
| | 10 | 9 | 8 | 7 | 6 | |

1. With squares show the combinations of 11:

4 squares + 7 squares = ?
5 squares + 6 squares = ?
9 squares + 2 squares = ?
11 squares − 8 squares = ?
11 squares − 4 squares = ?
11 squares − 7 squares = ?

2. Add:

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 2 | 8 | 6 | 7 | 9 | 3 | 10 | 4 | 5 | 1 |
| 9 | 3 | 5 | 4 | 2 | 8 | 1 | 7 | 6 | 10 |

3. Subtract:

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 11 | 11 | 11 | 11 | 11 | 11 | 9 | 11 | 11 | 11 |
| 9 | 1 | 3 | 6 | 2 | 5 | 8 | 4 | 8 | 7 |

4. Give missing numbers:

4 + 4 + ? = 11
5 + 5 + ? = 11
6 + 3 + ? = 11
3 + 3 + 3 + ? = 11
5 × 2, + ? = 11
6 × 1, + ? = 11
2 × 5, + ? = 11
11 − 9 = ?
11 − 4 = ?

5. 5 dollars + 3 dollars + ? = 11 dollars.

The sign $ may be used for the word **dollar** or **dollars**, and the sign ¢ indicates **cent** or **cents**. $8 + $3 = ? $5 + $6 = ? $9 + $2 = ? 4¢ + 7¢ = ? 10¢ + 1¢ = ?

6. In 11 there are —— 4's and —— over.
In 11 there are —— 5's and —— over.
In 11 there are —— 3's and —— over.

## THE NUMBER TWELVE

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 12 = | 1 | 2 | 3 | 4 | 5 | 6 | Six 2's | Three 4's |
| | 11 | 10 | 9 | 8 | 7 | 6 | Four 3's | Two 6's |

1. With pencils show the combinations that make the number 12.

8 pencils + 4 pencils = ?
2 pencils + 10 pencils = ?
11 pencils + 1 pencil = ?
9 pencils + 3 pencils = ?

12 pencils − 6 pencils = ?
12 pencils − 9 pencils = ?
12 pencils − 4 pencils = ?
12 pencils − 5 pencils = ?

2. Count to 12 by 1's; by 2's; by 3's; by 4's; by 6's.

3. 12 is how many more than 8? 10? 7? 2? 6? 1? 4? 11? 9? 3? 5?

4. Add:

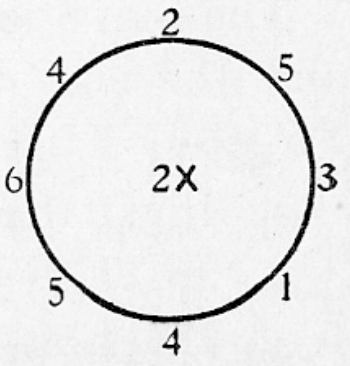
| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 4 | 5 | 10 | 3 | 9 | 7 | 2 | 8 | 6 | 1 |
| 8 | 7 | 2 | 9 | 3 | 5 | 10 | 4 | 6 | 11 |

5. Subtract:

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| 9 | 8 | 6 | 4 | 2 | 11 | 3 | 5 | 7 | 10 |

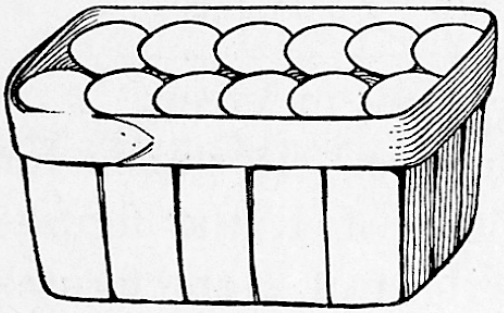
6. Find:

| | | |
|---|---|---|
| 4 + 4 + 4 | 2 × 6 | 5 + 5 + 2 |
| 3 + 3 + 3 + 3 | 4 × 3 | 7 + 3 + 1 |
| 2 × 5, + 2 | 3 × 4 | 2 × 3, + 6 |




7. Multiply each number outside of the circle by 2.

## DOZEN



1. Draw 12 lines. Erase $\frac{1}{2}$ of them. What is $\frac{1}{2}$ of 12?

2. Count the eggs that you see in the basket.

3. What name is sometimes given to 12 eggs? to 12 pins? to 12 lemons?

**12 things equal one dozen.**

4. How many oranges equal $\frac{1}{3}$ of a dozen?

5. What number is doubled to make 12?

6. Make problems with:

| | | |
|---|---|---|
| $4 \times 3$ cents | $3 \times 4$ apples | $2 \times 6$ games |
| $6 \times 2$ horses | $5 \times 2$ dollars | $2 \times 4$ cakes |
| $\frac{1}{2}$ of 12 peaches | $\frac{1}{3}$ of 12 cars | $\frac{1}{4}$ of 12 apples |

Subtract at sight:

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 7. | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2 |
| 8. | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 9. | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 |
| | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2 |

10. Make problems with the above numbers.

## WRITING AND READING NUMBERS

1. Count thirteen, written 13.

2. Count fourteen, written 14.

3. Count fifteen, written 15.

4. Write sixteen, seventeen, eighteen, nineteen.

The figure **0** is called **naught**, or **zero**. It stands for **nothing**. When placed to the right of 1, the figures stand for *ten;* when placed to the right of 2, the figures stand for *twenty*.

5. Count twenty-one, written 21; twenty-two, written 22; twenty-five, written 25.

6. Write twenty-six, twenty-seven.

7. Count thirty, written 30; forty, 40; fifty, 50; sixty, 60; seventy, 70; eighty, 80; ninety, 90.

Count ninety-nine, written 99.

8. Make a number board and write numbers to 99 thus:

The first column is made up of the ten *digits*.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 |
| 1 | 11 | 21 | 31 | 41 | 51 | 61 | 71 | 81 | 91 |
| 2 | 12 | 22 | 32 | 42 | 52 | 62 | 72 | 82 | 92 |
| 3 | 13 | 23 | 33 | 43 | 53 | 63 | 73 | 83 | 93 |
| 4 | 14 | 24 | 34 | 44 | 54 | 64 | 74 | 84 | 94 |
| 5 | 15 | 25 | 35 | 45 | 55 | 65 | 75 | 85 | 95 |
| 6 | 16 | 26 | 36 | 46 | 56 | 66 | 76 | 86 | 96 |
| 7 | 17 | 27 | 37 | 47 | 57 | 67 | 77 | 87 | 97 |
| 8 | 18 | 28 | 38 | 48 | 58 | 68 | 78 | 88 | 98 |
| 9 | 19 | 29 | 39 | 49 | 59 | 69 | 79 | 89 | 99 |

9. Write in figures: Twenty-five, thirty-five, forty-three, seventy-three, sixty-four, eighty-four, fifty-five, seventy-six.

Twenty-five cents.

Forty-five cents.

Sixty dollars.

Seventy-one dollars.

## READING NUMBERS

1. Read:

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 14 | 24 | 55 | 48 | 51 | 64 | 70 | 91 | 40 |
| 15 | 34 | 56 | 49 | 56 | 60 | 80 | 90 | 55 |
| 16 | 44 | 57 | 50 | 59 | 76 | 89 | 99 | 73 |

The right-hand figure in a number is called **ones'** figure; the second figure is called **tens'** figure.

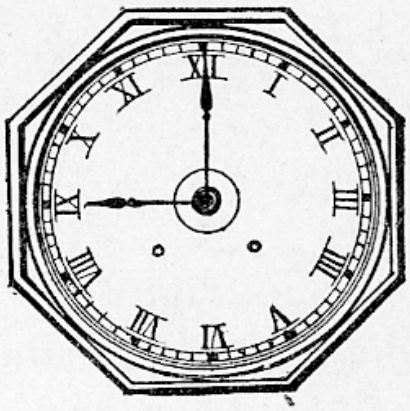
Point out the ones and the tens in each of the above numbers; thus, 14 is 1 ten and 4 ones.

### Table of Combinations in Addition

In addition there are 45 different combinations of figures, taken two at a time, and 17 different sums or amounts. Use these combinations for drill frequently:

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | 2 | | | 2 | 3 | | | 3 | 4 | | | 3 | 4 | 5 | | | |
| 1 | | | 1 | | | 2 | 1 | | | 2 | 1 | | | 3 | 2 | 1 | | | |
| 4 | 5 | 6 | | | | 4 | 5 | 6 | 7 | | | | 5 | 6 | 7 | 8 | | | |
| 3 | 2 | 1 | | | | 4 | 3 | 2 | 1 | | | | 4 | 3 | 2 | 1 | | | |
| 5 | 6 | 7 | 8 | 9 | | | | | | | | | 6 | 7 | 8 | 9 | | | |
| 5 | 4 | 3 | 2 | 1 | | | | | | | | | 5 | 4 | 3 | 2 | | | |
| 6 | 7 | 8 | 9 | | | | 7 | 8 | 9 | | | | | 7 | 8 | 9 | | | |
| 6 | 5 | 4 | 3 | | | | 6 | 5 | 4 | | | | | 7 | 6 | 5 | | | |
| 8 | 9 | | | | | 8 | 9 | | | | | 9 | | | | 9 | | | |
| 7 | 6 | | | | | 8 | 7 | | | | | 8 | | | | 9 | | | |

## ROMAN NUMBERS TO TWENTY



1. The Romans wrote all numbers up to 49 with the use of three letters, I, V, X. I stands for 1; V stands for 5; X stands for 10.

2. This is how the Romans wrote their first twelve numbers:

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| I | II | III | IV | V | VI |
| 7 | 8 | 9 | 10 | 11 | 12 |
| VII | VIII | IX | X | XI | XII |

3. Write the first twelve Roman numbers from memory.

4. Read the Roman numbers on the clock face. On clock faces IIII is used for IV.

5. Copy the following numbers:

| 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|
| XIII | XIV | XV | XVI | XVII | XVIII | XIX | XX |

6. Write in Roman numbers, 9. Show what change in the letters will make 11.

7. Write the Roman numbers from 1 to 20.

8. What time is it by the clock in the picture?

The short hand is called the **hour hand**. The long hand is called the **minute hand**.

9. Show the position of the hands at 30 minutes after 9; at 30 minutes after 10; at 30 minutes after 11.

## ADDITION

State sums at sight:

| | *a* | *b* | *c* | *d* | *e* | *f* | *g* | *h* | *i* | *j* |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| | 76 | 82 | 74 | 62 | 50 | 41 | 53 | 64 | 30 | 72 |

2. Change the 2 above to 3 and add; then to 4:

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 3. | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| | 85 | 65 | 75 | 55 | 45 | 63 | 73 | 93 | 43 | 83 |
| 4. | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 4 | 4 | 4 |
| | 59 | 49 | 69 | 79 | 49 | 38 | 48 | 88 | 78 | 58 |
| 5. | 2 | 3 | 2 | 4 | 6 | 2 | 5 | 2 | 5 | 2 |
| | 4 | 2 | 0 | 3 | 2 | 3 | 2 | 4 | 3 | 5 |
| | 3 | 4 | 3 | 1 | 0 | 4 | 1 | 1 | 0 | 3 |

6. A boy spent 25 cents for a book and 12 cents for a slate. How much did he spend for both?

25 cents
12 cents
37 cents

Write *ones* under *ones* and *tens* under *tens*. Add the right-hand column and place the total, 7, underneath. Add the second column and write the total underneath. The answer is 37 cents.

7. Find the sum of:

25 apples and 63 apples
37 cakes and 42 cakes
81 lemons and 17 lemons
42 balls and 24 balls
24 boys and 15 boys
32 chairs and 26 chairs
47 books and 22 books
36 bats and 52 bats

Add:

| | *a* | *b* | *c* | *d* | *e* | *f* | *g* |
|---|---|---|---|---|---|---|---|
| 1. | 20 | 30 | 40 | 50 | 60 | 30 | 50 |
| | 30 | 10 | 10 | 20 | 10 | 40 | 30 |
| 2. | 31 | 21 | 23 | 32 | 12 | 30 | 69 |
| | 12 | 32 | 13 | 23 | 33 | 13 | 20 |
| 3. | 42 | 44 | 44 | 43 | 14 | 33 | 82 |
| | 21 | 23 | 24 | 34 | 44 | 23 | 14 |

Add upward; test by adding downward:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 4. | \$ 45 | \$ 25 | \$ 35 | \$ 34 | \$ 42 | \$ 55 | \$ 44 |
| | \$ 14 | \$ 33 | \$ 54 | \$ 35 | \$ 45 | \$ 33 | \$ 22 |
| 5. | \$ 16 | \$ 45 | \$ 67 | \$ 72 | \$ 81 | \$ 83 | \$ 59 |
| | \$ 31 | \$ 54 | \$ 21 | \$ 25 | \$ 12 | \$ 15 | \$ 20 |

Only things having **like names** can be added.

| | *a* | *b* | *c* | *d* | *e* |
|---|---|---|---|---|---|
| 6. | 17 boys | 36 caps | 56 balls | 35¢ | 46 ft. |
| | 12 boys | 21 caps | 32 balls | 24¢ | 22 ft. |

| | *a* | *b* | *c* | *d* |
|---|---|---|---|---|
| 7. | 12 girls | 34 men | 14 tops | 15 books |
| | 10 girls | 22 men | 13 tops | 20 books |
| | 23 girls | 41 men | 21 tops | 31 books |
| 8. | 14 cars | 12 boxes | 26 hats | 16 days |
| | 32 cars | 43 boxes | 42 hats | 22 days |
| | 22 cars | 31 boxes | 31 hats | 41 days |

## ADDITION

1. There are 54 houses on one street and 28 on another. How many are there on both streets?

54 houses
28 houses
82 houses

Write *ones* under *ones* and *tens* under *tens*. Add the ones' column. The sum is 12 ones, or 1 ten and 2 ones. Write the 2 under the ones' column and add the 1 ten to the tens' column. 1 ten + 2 tens + 5 tens = 8 tens. The answer is 82 houses.

Add and test:

| | *a* | *b* | *c* | *d* | *e* | *f* | *g* |
|---|---|---|---|---|---|---|---|
| 2. | 36 | 47 | 42 | 54 | 48 | 35 | 64 |
| | 25 | 24 | 39 | 36 | 34 | 27 | 28 |
| 3. | 46 | 19 | 29 | 18 | 38 | 17 | 39 |
| | 36 | 24 | 10 | 36 | 17 | 46 | 45 |
| 4. | 19 | 21 | 32 | 23 | 31 | 42 | 13 |
| | 14 | 19 | 4 | 15 | 43 | 16 | 46 |
| | 3 | 12 | 16 | 6 | 8 | 17 | 18 |
| 5. | 11 | 16 | 19 | 41 | 39 | 42 | 15 |
| | 31 | 10 | 20 | 23 | 20 | 18 | 41 |
| | 29 | 49 | 17 | 18 | 18 | 20 | 38 |
| 6. | 30 | 40 | 32 | 9 | 8 | 15 | 13 |
| | 17 | 19 | 30 | 14 | 20 | 20 | 68 |
| | 28 | 34 | 9 | 16 | 9 | 38 | 14 |

7. Count by 3's to 36; to 75. By 4's to 88.

## ADDITION

1. Thomas has $24 in the bank and $17 in his pocket. How many dollars has he?

2. A farmer sold 26 bushels of apples on Monday, 35 bushels on Tuesday, and 30 bushels on Wednesday. How many bushels did he sell in the three days?

3. On Tuesday a newsboy sold 28 morning papers and 44 evening papers. How many papers did he sell?

4. A girl had 42 cents left after spending 25 cents for ribbon and 10 cents for pins. How much money had she at first?

5. Mrs. Jackson spent $24 for a suit, $31 for a coat, and $12 for a hat. How much did all cost?

6. Fred planted 29 potatoes in one row, 31 in another, and 33 in a third row. How many potatoes did he plant all together?

7. Ned spent 35¢ for a ball, 25¢ for a bat, and 10¢ for car fare. How much did he spend?

8. The girls spent at the park, 15¢ for ice cream, 20¢ on the roller coaster, 35¢ in the picture gallery, and 12¢ for popcorn. How much did they spend for all?

9. It took Mary 16 minutes to sweep and dust the library, 12 minutes for the dining room, and 21 minutes for the parlor. How long did it take for the three rooms?

10. Edwin has 43 marbles, and Walter has 24 more than Edwin. How many marbles has Walter?

## SUBTRACTION

1. Mary has 9 cents. She spends 5 cents. How many cents has she left?

2. A farmer had 7 cows. After selling a number he had 4 left. How many did he sell?

3. Anna had 15 towels to iron. When she had ironed 9, how many were left to iron?

4. Lucy had 12 roses and gave Mary 5 roses. How many roses had Lucy left?

### Table of Combinations in Subtraction

In subtraction there are 45 different combinations of figures, taken two at a time. Use these combinations for drill frequently:

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 7 |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 1 |
| 7 | 7 | 7 | 7 | 7 | 7 | 6 | 6 | 6 |
| 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 |
| 6 | 6 | 6 | 5 | 5 | 5 | 5 | 5 | 4 |
| 4 | 5 | 6 | 1 | 2 | 3 | 4 | 5 | 1 |
| 4 | 4 | 4 | 3 | 3 | 3 | 2 | 2 | 1 |
| 2 | 3 | 4 | 1 | 2 | 3 | 1 | 2 | 1 |

## SUBTRACTION

1. James had 48 cents. He spent 25 cents. How many cents had he then?

48 cents
25 cents
23 cents

Write *ones* under *ones* and *tens* under *tens*. 8 ones − 5 ones = 3 ones. Write the three ones in ones' place. 4 tens − 2 tens = 2 tens. The answer is 23 cents.

**Test.**— 23 + 25 = 48.

Only **like numbers** can be subtracted.

Subtract and test:

| | *a* | *b* | *c* | *d* | *e* | *f* | *g* |
|---|---|---|---|---|---|---|---|
| 2. | 44 | 38 | 56 | 64 | 49 | 65 | 45 |
| | 22 | 13 | 13 | 21 | 23 | 32 | 23 |
| 3. | 58 | 65 | 68 | 57 | 69 | 86 | 77 |
| | 33 | 41 | 15 | 24 | 34 | 42 | 33 |
| 4. | 77 | 88 | 75 | 96 | 87 | 94 | 52 |
| | 44 | 55 | 25 | 46 | 53 | 41 | 40 |
| 5. | 67 | 59 | 88 | 97 | 76 | 85 | 34 |
| | 52 | 45 | 56 | 27 | 36 | 64 | 30 |
| 6. | 99 | 96 | 87 | 79 | 98 | 77 | 59 |
| | 38 | 74 | 64 | 38 | 84 | 63 | 50 |
| 7. | 89 | 94 | 59 | 97 | 99 | 89 | 74 |
| | 19 | 91 | 18 | 82 | 29 | 78 | 24 |

8. Make and solve 50 examples like the above.

## PRACTICAL PROBLEMS

1. David is 14 years old and Walter is 7 years younger. How old is Walter?

2. Edna spent 35 cents for butter. She gave the clerk a half-dollar. How much change should she receive?

3. A postal clerk sold 43 postal cards one week, and 67 the next week. How many more did he sell in the second week than in the first week?

4. A man lives 68 miles from the city and has traveled 24 miles toward the city. How many miles has he yet to travel?

5. Tom drove home 78 cows and Ned 56. How many more cows were there in Tom's herd than in Ned's?

6. Edna had 78 pieces in her doll's dinner set, but 36 plates were broken. How many pieces remained?

7. Mr. Wilson's farm contains 76 acres of land, which is 14 acres more than his brother's farm contains. How many acres are there in his brother's farm?

8. William rode 27 miles on his bicycle on Thursday and 14 miles on Friday. How much farther did he ride the first day than the second?

9. Make problems with:

| pupils | $ | pictures | lamps | books |
|---|---|---|---|---|
| 46 – 14 | 37 – 24 | 63 – 12 | 48 – 36 | 73 – 21 |
| 56 – 43 | 62 – 31 | 84 – 21 | 46 – 24 | 36 – 15 |

10. 34 children were invited to Kate's party. How many of them were absent, if only 22 of them attended?

## MULTIPLICATION

1. What is the cost of two 2-cent pencils? $2 \times 2¢ = ?$

2. How much should you pay for three 2-cent apples? four 2-cent tops? five 2-cent stamps? six 2-cent papers?

3. James counted $2¢$ seven times; thus, $2¢ + 2¢ + 2¢ + 2¢ + 2¢ + 2¢ + 2¢$, and found that he had $14¢$. He could have said *seven* 2's are 14, or $7 \times 2 = 14$.

4. Write in two other forms: $8 \times 2 = 16$; nine 2's = 18; $10 \times 2 = 20$.

5. Build the table of 2's thus:

Write the sum of each column beneath it. Look at each column. See how many 2's it contains. Say,

| | | | | | |
|---|---|---|---|---|---|
| | | | | | 2 |
| | | | | 2 | 2 |
| | | | 2 | 2 | 2 |
| | | 2 | 2 | 2 | 2 |
| | 2 | 2 | 2 | 2 | 2 |
| 2 | 2 | 2 | 2 | 2 | 2 |

$1 \times 2 = 2$; $2 \times 2 = 4$; $3 \times 2 = 6$; $4 \times 2 = 8$; $5 \times 2 = 10$; $6 \times 2 = 12$; etc.

6. Find products:

| | | | |
|---|---|---|---|
| $5 \times 2$ caps | $8 \times 2$ plums | $9 \times 2$ birds | $4 \times 2$ cups |
| $6 \times 2$ dolls | $3 \times 2$ hats | $7 \times 2$ birds | $2 \times 2$ hats |

7. Memorize the table.

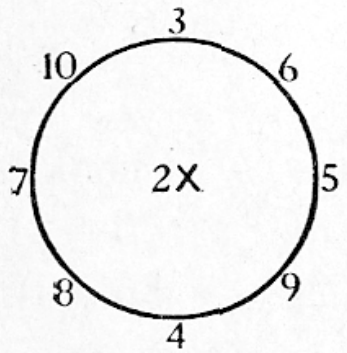



**Table of 2's**

| | |
|---|---|
| $1 \times 2 = 2$ | $6 \times 2 = 12$ |
| $2 \times 2 = 4$ | $7 \times 2 = 14$ |
| $3 \times 2 = 6$ | $8 \times 2 = 16$ |
| $4 \times 2 = 8$ | $9 \times 2 = 18$ |
| $5 \times 2 = 10$ | $10 \times 2 = 20$ |

8. Multiply each number outside the circle by 2.

1. How many are two 7's? two 10's?

2. Write these two problems in two other ways.

3. How many are two 34's? This may be written:

$34 + 34 = 68$, or

$$\begin{array}{r} 34 \\ +\,34 \\ \hline 68, \text{ sum.} \end{array}$$

The sum of two 34's is 68.

4. A shorter process for finding two 34's is by multiplication; written thus,

$$\begin{array}{r} 34 \\ \times\,2 \\ \hline 68 \end{array}$$

Write the multiplier 2 under the right-hand figure of the number to be multiplied, which is 34. Beginning at the right, say $2 \times 4 = 8$. Write 8 in ones' place in the answer. $2 \times 3 = 6$. Write 6 in tens' place in the answer. The result is 68. **Test** by addition, $34 + 34 = 68$.

Multiply, and test by addition:

| | *a* | *b* | *c* | *d* | *e* | *f* |
|---|---|---|---|---|---|---|
| 5. | 23 | 54 | 53 | 64 | 71 | 62 |
| | 2 | 2 | 2 | 2 | 2 | 2 |
| 6. | 40 | 81 | 94 | 70 | 63 | 53 |
| | 2 | 2 | 2 | 2 | 2 | 2 |
| 7. | 93 | 72 | 62 | 53 | 82 | 91 |
| | 2 | 2 | 2 | 2 | 2 | 2 |
| 8. | 44 | 32 | 83 | 24 | 84 | 74 |
| | 2 | 2 | 2 | 2 | 2 | 2 |

NOTE.—Teachers who desire to proceed from this point with the work of multiplication, will find the tables of 3's, 4's, and 5's on pages 55–60 69.

## DIVIDING BY 2

1. // // // // // Count the splints by 2's. How many times must two splints be taken to have 10 splints? 10 splints contain 2 splints —— times.

2. 6 contains 2 —— times. 8 contains 2 —— times. 12 contains 2 —— times.

3. Into how many groups of two each may 10 be divided? 10 divided by 2 equals 5, written $10 \div 2 = 5$, or $2\overline{)10}$. The sign $\div$ is read **divided by**.

Read, and give answers:

4. $4 \div 2$; $6 \div 2$; $8 \div 2$; $10 \div 2$.

5. $2\overline{)8}$; $2\overline{)10}$; $2\overline{)6}$; $2\overline{)12}$.

6. Divide 24 by 2.

$2\overline{)24}$
$12$

2 is contained in 2 tens, 1 ten time; write 1 in tens' place. 2 is contained in 4 ones, 2 times; write 2 in ones' place. The answer is 12.

Find the answers:

| | *a* | *b* | *c* | *d* | *e* |
|---|---|---|---|---|---|
| 7. | $2\overline{)22}$ | $2\overline{)24}$ | $2\overline{)26}$ | $2\overline{)44}$ | $2\overline{)20}$ |
| 8. | $2\overline{)28}$ | $2\overline{)40}$ | $2\overline{)48}$ | $2\overline{)42}$ | $2\overline{)46}$ |
| 9. | $2\overline{)62}$ | $2\overline{)66}$ | $2\overline{)60}$ | $2\overline{)64}$ | $2\overline{)68}$ |
| 10. | $2\overline{)80}$ | $2\overline{)84}$ | $2\overline{)88}$ | $2\overline{)86}$ | $2\overline{)82}$ |

## MAKING CHANGE

Secure toy money, or make circles from cardboard to represent the different pieces.

Appoint storekeepers and purchasers, and have the counting done in the schoolroom. Consult "Market Report" for prices.

1. Hattie's purchase.

| | |
|---|---|
| Sugar, | 10¢ |
| Butter, | 15¢ |
| Potatoes, | 12¢ |
| Cost, | 37¢ |
| Change | 1¢ |
| | 1¢ |
| | 1¢ |
| | 10¢ |
| | 50¢ |

The storekeeper, when making the change, places the coins as he counts, thus: 38¢, 39¢, 40¢, 50¢. Change, 13¢.

2. John's purchase.

| | |
|---|---|
| Fire crackers, | 15¢ |
| Torpedoes, | 5¢ |
| Matches, | 2¢ |
| Rockets, | 20¢ |
| Cost, | 42¢ |
| Change | 1¢ |
| | 1¢ |
| | 1¢ |
| | 5¢ |
| | 50¢ |

3. Willie bought meat for 30¢ and milk for 4¢. How much change should he receive from 50¢?

Make change from 50¢ for:

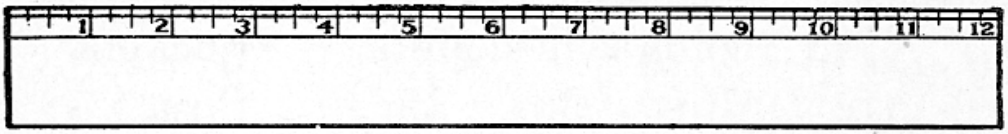
4. Oranges for 15¢, lemons for 8¢, pears for 5¢.
5. Popcorn for 6¢, taffy for 10¢, nuts for 25¢.
6. Rice for 8¢, tapioca for 15¢, prunes for 10¢.
7. Potatoes for 15¢, bread for 8¢, turnips for 12¢.
8. Plums for 20¢, sugar for 10¢, pepper for 8¢.
9. Celery for 7¢, lettuce for 9¢, spinach for 12¢.
10. Corn for 12¢, seed for 25¢, apples for 10¢.

## MEASURING LENGTH

For this exercise the teacher should secure a foot rule and a yard stick.

1. Examine a **foot** rule. Observe that it is divided into 12 equal spaces. Each space is called **one inch.** A foot rule is therefore 12 inches long.

2. The following represents a foot rule, although it is only one fourth the real length. Count the number of inch spaces.




3. Cut from cardboard a foot rule and mark the inches on it.

4. With the rule draw a line 1 inch long; 4 inches long.

5. How many inches equal $\frac{1}{2}$ of a foot? $\frac{1}{3}$ of a foot? $\frac{1}{4}$ of a foot?

6. Draw an oblong 12 inches long and 8 inches wide. How many inches is it around the oblong?

7. Draw a 2-inch square. How many inches is it around the square?

8. Measure a yard stick with your foot rule. This shows that there are **3 feet in a yard.**

9. Mark off with the yard stick on the blackboard a line 1 foot in length; 2 feet in length; 1 yard in length.

10. How many feet equal 2 yards? $\frac{1}{3}$ of a yard?

## REVIEW

1. A man paid $ 80 for 2 cows. How many dollars did each cost?

2. A family bought 48 pints of milk in a month. How many quarts did they buy?

3. How much will 2 lb. of tea cost at 40¢ a pound?

4. How many 2-cent stamps can be bought for 64 cents?

5. Eva paid 86 cents for 2 yards of linen. What was the cost of 1 yard?

6. If Ruth takes 2 piano lessons every week, how many does she take in 44 weeks?

7. A girl is 14 years old. Her brother is twice as old. How old is her brother?

8. How many pints are there in 44 quarts?

9. If a clerk earns $ 44 a month, how much will he earn in 2 months?

10. Dick has 68 cents. He gives 35 cents to Kate. How many cents has he left?

11. If molasses costs 14 cents a pint, how much will a quart cost?

Find the cost of:

12. 2 pieces of soap at 10 cents a piece.

13. 2 pounds of butter at 24 cents a pound.

14. 2 dozen lemons at 12 cents a dozen.

15. 2 yards of muslin at 11 cents a yard.

# HAMILTON'S PRIMARY ARITHMETIC

## ANSWERS

### FIRST AND SECOND YEAR

**Page 28.—7.** First column: 88 apples; 79 cakes; 98 lemons; 66 balls; second column: 39 boys; 58 chairs; 69 books; 88 bats.

**Page 29.—1.** *a.* 50; *b.* 40; *c.* 50; *d.* 70; *e.* 70; *f.* 70; *g.* 80. **2.** *a.* 43; *b.* 53; *c.* 36; *d.* 55; *e.* 45; *f.* 43; *g.* 89. **3.** *a.* 63; *b.* 67; *c.* 68; *d.* 77; *e.* 58; *f.* 56; *g.* 96. **4.** *a.* $59; *b.* $58; *c.* $89; *d.* $69; *e.* $87; *f.* $88; *g.* $66. **5.** *a.* $47; *b.* $99; *c.* $88; *d.* $97; *e.* $93; *f.* $98; *g.* $79. **6.** *a.* 29 boys; *b.* 57 caps; *c.* 88 balls; *d.* 59 cents; *e.* 68 ft. **7.** *a.* 45 girls; *b.* 97 men; *c.* 48 tops; *d.* 66 books. **8.** *a.* 68 cars; *b.* 86 boxes; *c.* 99 hats; *d.* 79 days.

**Page 30.—2.** *a.* 61; *b.* 71; *c.* 81; *d.* 90; *e.* 82; *f.* 62; *g.* 92. **3.** *a.* 82; *b.* 43; *c.* 39; *d.* 54; *e.* 55; *f.* 63; *g.* 84. **4.** *a.* 36; *b.* 52; *c.* 52; *d.* 44; *e.* 82; *f.* 75; *g.* 77. **5.** *a.* 71; *b.* 75; *c.* 56; *d.* 82; *e.* 77; *f.* 80; *g.* 94. **6.** *a.* 75; *b.* 93; *c.* 71; *d.* 39; *e.* 37; *f.* 73; *g.* 95.

**Page 31.—1.** $41. **2.** 91 bushels. **3.** 72 papers. **4.** 77 cents. **5.** $67. **6.** 93 potatoes. **7.** 70 cents. **8.** 82 cents. **9.** 49 minutes. **10.** 67 marbles.

**Page 33.—2.** *a.* 22; *b.* 25; *c.* 43; *d.* 43; *e.* 26; *f.* 33; *g.* 22. **3.** *a.* 25; *b.* 24; *c.* 53; *d.* 33; *e.* 35; *f.* 44; *g.* 44. **4.** *a.* 33; *b.* 33; *c.* 50; *d.* 50; *e.* 34; *f.* 53; *g.* 12. **5.** *a.* 15; *b.* 14; *c.* 32; *d.* 70; *e.* 40; *f.* 21; *g.* 4. **6.** *a.* 61; *b.* 22; *c.* 23; *d.* 41; *e.* 14; *f.* 14; *g.* 9. **7.** *a.* 70; *b.* 3; *c.* 41; *d.* 15; *e.* 70; *f.* 11; *g.* 50.

**Page 34.—1.** 7 years. **2.** 15 cents. **3.** 24 cards. **4.** 44 miles. **5.** 22 cows. **6.** 42 pieces. **7.** 62 acres. **8.** 13 miles. **9.** 32 pupils; 13 pupils; $13; $31; 51 pictures; 63 pictures; 12 lamps; 22 lamps; 52 books; 21 books. **10.** 12 children.

**Page 38.—3.** 16 cents. **4.** 22 cents. **5.** 9 cents. **6.** 17 cents. **7.** 15 cents. **8.** 12 cents. **9.** 22 cents. **10.** 3 cents.

**Page 40.—1.** $40. **2.** 24 quarts. **3.** 80 cents. **4.** 32 stamps. **5.** 43 cents. **6.** 88 lessons. **7.** 28 years. **8.** 88 pints. **9.** $88. **10.** 34 cents. **11.** 28 cents. **12.** 20 cents. **13.** 48 cents. **14.** 24 cents. **15.** 22 cents.

**Page 42.—17.** 1002. **18.** 1009. **19.** 1006. **20.** 1007. **21.** 1008. **22.** 1003. **27.** 648. **28.** 8533. **29.** 4085. **30.** 5009. **31.** 9405.

### THIRD YEAR

**Page 43.—8.** *a.* 79; *b.* 98; *c.* 118; *d.* 150; *e.* 107. **9.** *a.* 132; *b.* 65; *c.* 128; *d.* 88; *e.* 87.

**Page 44.—2.** *a.* 994; *b.* 820; *c.* 781; *d.* 1204; *e.* 831; *f.* 755. **3.** *a.* 1005; *b.* 853; *c.* 1733; *d.* 1442; *e.* 1490; *f.* 1932. **4.** *a.* 968; *b.* 962; *c.* 954; *d.* 1334; *e.* 189; *f.* 757. **5.** *a.* 1397; *b.* 1006; *c.* 1338; *d.* 1292; *e.* 1414; *f.* 1757.