SELF-HELP NUMBER SERIES

IN NUMBER LAND

BY
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ILLUSTRATED BY
Marion and Doris Henderson

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The Macmillan Company
1938
TO THE TEACHER

Remove this page from pupils' books.

This workbook-text is in no way intended to take the place of the activity program which every teacher of
young children must use to make numbers real. The book is intended to supplement such a program and
furnish a means of assurance that every child shall
personally master each number fact and shall be
provided with means for complete mastery of it.

If you will carefully carry out the following directions in introducing this little book, the pupils will be
able to complete it without further explanation from you.

Step I. Fix correct association between dictionary
pictures and words that they represent. All
illustrations on cover pages are dictionary pictures. When the
book is presented, go over these illustrations in group
discussion and see that they are correctly named. Color
and take away require particular explanation. Color:
Explain that the color of the box tells us to do something; it tells us to color. The picture of a box of
crayons is right over the word so that we shall not forget that it says Color. See that the question, “What does this word say?” is answered with
Color. Take away: Tell the pupils that the boy whose
hand they see in the picture colored two balls, then
his book told him to take one away. He couldn't really
take one away without cutting or tearing his book; so he
marked it as if he really did it with a dark crayon and just
pretended that it was gone. And that is just the way
we do when the book tells us to “take away” anything.
Practice the take-away game on the blackboard and
introduce the word is left as used in the illustration.

Step II. Give drill in finding words by matching
the unknown word with the words beneath the
dictionary pictures. Explain that in this book there are
directions that tell us how to do things. If we cannot
read them, we can look under the dictionary
pictures and find out what the words say. Print words
on the blackboard and let the pupils find the picture
that matches each one, letting someone give each word
after all have located it in the book. Stress Draw, Color,
and Write. In similar manner drill in use of the number
references found on the inside page of the front cover.
Direct the pupils in coloring the oblong above the
color names on the inside of the front cover; then drill
in finding the color words, using the chart as a reference.

Step III. Experience in following directions. Page 3
should be used under direction. Give the pupils
small strips of cardboard to be used as markers for
keeping the place. Call attention to the two ways of
saying “one ball,” as shown above and under the picture
of the ball. Place markers under the first direction
and ask the pupils to see what it tells them to do.
Those who cannot read the sentence are not told
the words but are aided in finding out for themselves by
means of the dictionary pictures. Continue working in
a directed group throughout the page. After working out
the first few pages in this manner the majority of
the pupils will be able to continue unaided. Very slow
pupils may be directed until they show ability to con-
tinue without assistance. When a question arises, be sure
to urge the pupil to use the references provided for his as-
sistance; do not allow him to depend on the teacher.

On the inside of the back cover is a counting and
number-writing chart to be used as a reference while
mastering these skills. Pupils may be directed to read
and copy the last column when learning to count
by 5’s and the fifth and last columns when learning to count by 10’s.

When the pupils reach page 18, they may need to
have the take-away process explained anew and dem-
onstrated. On pages 19 and 20 the use of the plus
and minus signs is introduced. Let the pupil say “and” for
the plus sign and “take away” for the minus sign. Thus
1 + 1 will be read, “One and one are two”; 1

Read “Two take away one leaves one.”

On pages 95 and 96 will be found a dictionary of all
combinations used in the book. The teacher is urged to
have pupils use this dictionary when in doubt about
an answer to a review combination. (Answers to newly
introduced combinations can be found on the same
page where they first appear.) Such a practice will
eliminate all need for counting and the practice of error.
A little experience will enable the pupils to find
combinations in this dictionary readily.

If the references provided are used by the pupils—as
they will be if the child properly understands their
purpose—every question which may arise can be an-
swered by the pupil through his own efforts. The inde-
pendence and initiative which are thus developed are
invaluable.

The pack cards supply individual pupils with a
handy means for drilling on their specific individual
difficulties. These cards may be used also for group
games, some of which are suggested.

The “races” appearing after Pack 2 are merely
photographs of the results of the tests which appear be-
low each race illustration. They serve to show the child
his relative degree of mastery of the number facts given
(in terms of his understanding) and help motivate com-
plete mastery.

Models for number writing appear throughout this
book in printed form only because of the varied types
of handwriting used in different schools; there-
fore a chart showing the desired hand-written number
forms should be placed on the blackboard or posted
where it is visible to pupils at all times. The printed
form should appear with the hand-written one, to serve
as a key, like this:

```
1 2 3 4 5 6 7 8 9 10
/ 2 3 4 5 6 7 8 9 10
```

The numbers on the heavy page at the front of the
book may be used as models if the style conforms to
that required in your city.

ACKNOWLEDGMENTS

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Fournoy H. Clark, Mildred Clark Scott, and
Elizabeth Edwards for active assistance in the preparation of
the manuscript for this book and to Carl Strong for
valuable criticism.

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Satisfaction guaranteed or money refunded.
two balloons

2 balloons

Color 2 balloons red.

Draw 2 balloons.

Color 2 balloons green.

Draw two balloons.

Color two balloons orange.

three balls

3 balls

Color 3 balls blue.

Draw 3 balls.

Color three balls orange.

Draw three balls.

Color three balls green.
four kites

4 kites

Color 4 kites orange.

Draw 4 kites.

Color four kites red.

five trees

5 trees

Color 5 trees green.

Draw 5 trees.

Color five balloons brown.
Color 1 balloon brown.
Color 3 balloons green.
Color 5 balloons orange.
Color 4 balloons blue.
Color 2 balloons red.

Color 6 balls orange.
seven trees

7 trees
Color 7 trees brown.

Draw seven trees.

Color 6 kites green.

eight rabbits

8 rabbits
Color 8 rabbits brown.

Draw eight rabbits.

Color 8 rabbits black.
nine houses

9 houses
Color 9 houses green.

Draw nine houses.

Color 9 houses brown.

ten trees

10 trees
Color 10 trees green and brown.

Draw ten trees.

Color 10 trees orange and red.
Write:

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To the Teacher: Individual pupils who need more drill in writing the numbers above should be directed to write them on a separate sheet of paper. This should be repeated in each case until the pupil has acquired the desired skill. A model of handwritten number forms should be visible to the pupil at all times, as suggested in the introductory notes to the teacher. The models on the heavy paper at the front of the book may be used if they conform in style to that used in your city.

To the Teacher: Instruct the pupils to draw a line from the numbers to the pictures that match them. This test should be given under the teacher's direction in order that she may observe the readiness with which the child recognizes number groups and may supply activities to strengthen concepts of groups not quickly recognized.
TO THE TEACHER

The pack cards supplied on the heavy pages are to be torn out, separated, and kept together by a rubber band. The pupil will use them for individual drill. Give the pupil the following directions:

"Take your pack of cards. Look at the side of the card that has no answer; think the answer. Then turn the card over and see if your answer was right. If you thought of the right answer, put the card in one pile; if your answer was wrong, put the card in another pile."

"When you have finished, you will have two piles of cards; one pile of cards that you know and one pile of those that you do not know. Go through the cards that you do not know again and see if you can put some of them in the pile that you know. See how soon you can get all the cards in the pile that you know."

Pupils also enjoy working in pairs, each flashing the cards for the other in turn.

Many group games may be played with these cards. Some are suggested here; others may be devised by the teacher.

The first pack tests number concepts; all others test combinations. All pack cards must be flashed fast enough that the pupil cannot count; if the child hesitates, turn the card and show the answer.

For written work the pupil should place the cards in a pack, the side without answers up. He should copy the top combination exactly on a sheet of paper and write the answer which he thinks. Then, before proceeding to the next combination, he should turn the card and check the answer he has just written. This will avoid all practice of error in written work.

When children first begin to write the combinations, they have difficulty in spacing them properly on the page. Teach them to fold a sheet of paper four times (crumpling carefully), thus making sixteen uniform spaces. Direct them to write one combination in each space. Soon they will develop enough sense of balance to write the combinations without folding the paper.

TEN-PINS

This game is to be used after Pack 2 is reached. Stand ten ordinary cardboard mailing tubes on the floor. A pupil rolls a soft ball toward the tubes, knocking down as many as possible. The pupil allows the fallen tubes to remain down and rolls the ball again. He then adds the number that fell the first time to the number that fell the second time. This is his score. The winner is the pupil who holds high score.

AN AIRPLANE RIDE

This game is to be used after Pack 2 is reached. Place chairs in a double row to simulate seats in an airplane. One pupil is chosen as the traffic man. Another may sell tickets.

The remaining pupils who desire to ride in the plane must first "buy" their tickets. They go to the ticket seller, who shows each of them a pack card. If they give the correct answer to the combination on it, they get the card to use as a ticket.

When the passenger boards the plane, he presents his ticket to the traffic man. The traffic man must give the correct answer to the combination on the ticket card. If he cannot do so, he loses his job and the passenger presenting the ticket becomes traffic man in his stead.

BASEBALL

This is a game which is greatly enjoyed by the children and is worth the time required to teach it. It is well for the teacher to act as umpire until the game is thoroughly understood by the children.

Two captains are named, and these choose sides. A pitcher and a catcher are chosen for each side. A score-keeper records the score.

One side is "in," and pupils on that side "come to bat" in turn. The pitcher on the opposite side flashes a pack card for the batter. If the batter answers correctly, the umpire calls, "First base!" If not, the umpire calls, "Strike one!" and the catcher of the opposite side gives the correct answer if possible, which puts the batter "out." If the batter answers four successive cards correctly (first, second, and third bases and home), he makes a home run for his side and is recorded in the score. If he is caught out by the catcher or strikes out (three wrong responses), a zero is scored against his side; and three outs call for a change of sides at bat. The pack cards may be enlarged for large groups.

A typical scoreboard for a baseball game may look something like the one at the bottom of this page.

The class may be permanently divided into two teams and a record kept of the games won by each team. In order to help their side win, more apt pupils will drill slower ones in spare moments.
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**two rabbits**

2 rabbits

Color 1 rabbit brown. Color 1 rabbit black.

1 rabbit and 1 rabbit are 2 rabbits.

1 rabbit and 1 rabbit are ____ rabbits.

One rabbit and one rabbit are two rabbits.

---

Draw one rabbit.

Color two rabbits brown.

One rabbit and one rabbit are ____ rabbits.
two rabbits

Color two rabbits brown.
Take away one rabbit.
One rabbit is left.

2 kites

Color 2 kites orange.
Take away 1 kite. _ kite is left.

Draw 1 ball.

Color 2 balls blue.

1 ball and 1 ball are ___ balls.

1 ball and 1 ball are 2 balls.

1 and 1 are 2.

1 and 1 are ___

\[ \frac{1}{2} \quad \frac{1}{2} \quad \frac{1}{2} \quad \frac{1}{2} \]

One and one are ___

1 and ___ are 2

\[ \frac{1}{2} \quad \frac{1}{2} \quad \frac{1}{2} \quad \frac{1}{2} \]

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two boats

Color two boats green.

Take away 1 boat.

1 boat is left.

\[
\begin{align*}
2 & \quad \text{take away} \quad 1 \\
1 & \quad \Quad
three apples

Color three apples green.
Take away one apple.

Color 3 apples red.
Take away 2 apples.

three apples

\[
\begin{align*}
3 & \quad 3 \\
-1 & \quad -1
\end{align*}
\]

\[
\begin{align*}
\frac{3}{2} & \quad \frac{3}{1}
\end{align*}
\]

Color 3 kites orange. Color 1 kite red.

Three kites and one kite are ___ kites.

3 kites and 1 kite are ___ kites.

3 and 1 are 4. ___ and 1 are 4.

Draw 1 dog.

Color 4 dogs brown.

1 dog and 3 dogs are ___ dogs.

\[
\begin{align*}
3 & \quad 1 \\
\frac{3}{4} & \quad \frac{1}{4}
\end{align*}
\]

\[
\begin{align*}
+1 & \quad +3 \\
-1 & \quad -1
\end{align*}
\]
Color four kites green.
Take away 3 kites.

____ kite is left.

\[ \begin{array}{cccccccc}
4 & 4 & 3 & 1 & 4 & 1 & 3 & 4 \\
-3 & -3 & +1 & +3 & -3 & +3 & +1 & -3 \\
\end{array} \]

Color 4 kites blue.
Take away one kite.

____ kites are left.

\[ \begin{array}{cccccccc}
1 & 3 & 4 & 4 & 4 & 4 & 3 & 1 \\
+3 & +1 & -3 & -1 & -1 & -3 & +1 & +3 \\
\end{array} \]

\[ \begin{array}{cccccccc}
2 & 4 & 3 & 2 & 3 & 4 & 1 & 1 \\
+1 & -3 & -2 & -1 & -1 & -3 & +1 & +2 \\
\end{array} \]

\[ \begin{array}{cccccccc}
1 & 3 & 4 & 3 & 2 & 3 & 2 & 2 \\
+3 & +1 & -3 & -2 & -1 & +1 & +1 & -1 \\
\end{array} \]

\[ \begin{array}{cccccccc}
4 & 1 & 4 & 2 & 1 & 3 & 3 & 3 \\
-3 & +2 & -1 & +1 & +3 & -1 & +1 & -2 \\
\end{array} \]
four balls

Color two balls blue. Color 2 balls orange.

2 balls and 2 balls are ____ balls.

\[
\begin{align*}
2 & \quad +2 \\
\hline
4 & 
\end{align*}
\]

2 and 2 are 4.

Draw 2 dogs.

Color four dogs black.

\[
\begin{align*}
2 & \quad +2 \\
\hline
4 & 
\end{align*}
\]

2 dogs and ____ dogs are 4 dogs.

1 dog and 1 dog are ____ dogs.

\[
\begin{align*}
2 & \quad +2 \\
\hline
4 & 
\end{align*}
\]

2 dogs and 2 dogs are ____ dogs.

Color four balls orange.

Take away two balls.

____ balls are left.

Color 4 trees orange and brown.

Take away 2 trees.

____ trees are left.

\[
\begin{align*}
2 & \quad 2 & \quad 4 & \quad 1 & \quad 2 & \quad 2 & \quad 4 & \quad 4 \\
\hline
\end{align*}
\]
Draw 1 balloon.

Color 5 balloons blue and green.

1 balloon and 4 balloons are ___ balloons.

\[ \frac{1}{5} + \frac{4}{4} \]

Color five balloons red and green.

Four balloons and one balloon are ___ balloons.

\[ \frac{4}{4} + \frac{4}{1} + \frac{4}{4} + \frac{4}{1} + \frac{1}{2} + \frac{3}{3} + \frac{4}{4} \]

Take away four houses.

___ house is left.

\[ \frac{1}{4} + \frac{4}{1} + \frac{5}{-4} + \frac{2}{1} + \frac{2}{-1} + \frac{3}{-1} + \frac{4}{-1} + \frac{4}{-1} \]

\[ \frac{2}{+2} + \frac{3}{-2} + \frac{3}{-1} + \frac{4}{-2} + \frac{5}{-4} + \frac{1}{+4} + \frac{3}{+1} + \frac{4}{+1} \]
Color five houses red.

Take away one house. (take away $\frac{1}{4}$)

--- houses are left.

$\begin{align*}
1 & 4 & 5 & 5 & 4 & 5 & 1 & 5 \\
+4 & +1 & -1 & -4 & +1 & -4 & +4 & -1
\end{align*}$

$\begin{align*}
2 & 2 & 4 & 4 & 4 & 1 & 1 & 5 \\
+2 & +1 & +1 & -2 & -3 & +4 & +3 & -1
\end{align*}$

$\begin{align*}
5 & 4 & 3 & 5 & 3 & 5 & 4 & 1 \\
-4 & +1 & -2 & -4 & -2 & -4 & -2 & +4
\end{align*}$

$\begin{align*}
1 & 1 & 1 & 3 & 3 & 3 & 4 & 2 \\
+1 & +4 & +2 & -2 & -1 & +1 & -1 & -1
\end{align*}$

$\begin{align*}
1 & 3 & 1 & 3 & 1 & 3 & 1 & 4 \\
+1 & -2 & +4 & -1 & +2 & -1 & +1 & -1
\end{align*}$

$\begin{align*}
3 & 2 & 5 & 2 & 4 & 4 & 5 & 1 \\
-2 & +2 & -1 & +1 & -1 & -1 & +1 & -4 & +4
\end{align*}$

$\begin{align*}
4 & 4 & 1 & 5 & 3 & 2 & 2 & 4 \\
+1 & -3 & +1 & -4 & -2 & +1 & +2 & -3
\end{align*}$

$\begin{align*}
3 & 2 & 1 & 2 & 4 & 1 & 5 & 3 \\
-1 & +2 & +3 & -1 & -3 & +4 & -4 & +1
\end{align*}$

$\begin{align*}
5 & 2 & 4 & 3 & 1 & 4 & 1 & 4 \\
-1 & +1 & +1 & -2 & +3 & -1 & +1 & -3
\end{align*}$

$\begin{align*}
1 & 4 & 3 & 3 & 1 & 5 & 1 & 2 \\
+2 & -1 & -1 & +1 & +2 & -1 & +3 & -1
\end{align*}$
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TO THE TEACHER: See the directions on page 14.
Sailboat Race

To the Teacher: The races are photographs which show the child his relative degree of mastery of the number facts in the test which appears on the same page. Let the pupil take the test under your supervision; he should not consult any references while taking it. His score will be the number of correct responses. Direct him, in connection with this lesson, to find and color the boat whose number matches his score. This will be his boat, and he can see by the picture whether or not he won the race. Other races are provided on pages 49, 55, 78, 81, and 99.

Score: ____________________
Draw 3 cups.

Color 6 cups orange.

Three cups and three cups are six cups.

3 and 3 are 6. Three and three are \[ \frac{3 + 3}{+3} \equiv \frac{6}{+3} \]

3 and 3 are ____.

Draw 6 apples.

Color six apples.

\[ \frac{6 - 3 - 3 - 3}{-3} \equiv \frac{3}{-3} \]

Take away 3 apples.

\[ \frac{4 - 6 - 3 - 4 - 5 - 3 - 5 - 6}{-1 - 3 + 3 - 2 - 1 + 3 - 4 - 3} \]

six birds

Color five birds brown.

\[ \frac{5 + 1 + 5}{+1 + 5 + 1} \]

Color one bird blue.

\[ \frac{6 + 5 + 6}{6 + 6 + 6} \]

Five and one are six.

\[ \frac{1 + 1 + 5}{+5 + 5 + 1} \]

One and five are six.

1 and 5 are ____.

5 and 1 are ____.

Draw 6 apples.

Color six apples red.

\[ \text{take away} \frac{1 - 1 - 1}{5} \]

Take away 1 apple.

\[ \frac{6 + 6}{6 + 6 + 6} \]

Take away 5 apples.

\[ \frac{-5 - 5 - 5}{1} \]
Draw 4 apples.  2  4
Color 6 apples green.  \[ \frac{+4}{6} + \frac{2}{6} \]

2 and 4 are ___  2 and 4 are ___
4 and 2 are ___  4 and 2 are ___

6 apples

Color 6 apples red.  6  6  6
Take away 2 apples. \[ \frac{2}{4} - \frac{2}{2} \]

Color 6 apples green.  6  6  6
Take away 4 apples. \[ \frac{4}{2} - \frac{4}{2} \]

5 boys

Color 3 boys blue.  3  2  3  2
Color 2 boys orange. \[ \frac{+2}{5} + \frac{3}{5} + \frac{2}{5} + \frac{3}{5} \]

Three and two are five.
Two and three are five.
3 and 2 are ___  2 and 3 are ___

five girls

Color 5 girls.  5  5  5  5  5
Take away 2 girls. \[ -\frac{2}{3} - \frac{2}{3} - \frac{2}{3} - \frac{2}{3} \]

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Color 5 girls.

\[
\begin{array}{cccc}
5 & 5 & 5 & 5 \\
-3 & -3 & -3 & -3 \\
\frac{5}{2} & & & \\
\end{array}
\]

Take away 3 girls.

\[
\begin{array}{cccccccc}
1 & 2 & 2 & 2 & 1 & 1 & 2 & 4 \\
+3 & +1 & +2 & +3 & +1 & +4 & +4 & -1 \\
\end{array}
\]

\[
\begin{array}{cccccccc}
5 & 2 & 4 & 4 & 3 & 4 & 2 & 3 \\
+1 & +3 & +2 & -2 & -1 & +1 & +1 & -2 \\
\end{array}
\]

\[
\begin{array}{cccccccc}
3 & 3 & 4 & 3 & 1 & 2 & 2 & 2 \\
+3 & +1 & -1 & +2 & +5 & +2 & +4 & +3 \\
\end{array}
\]

To the teacher: Direct the pupil to fill in the missing numbers. The top of this page and page 32 may be used for reference.
Color four trees green. Color 4 trees brown.
Four trees and four trees are eight trees.
4 trees and 4 trees are 8 trees.
Four and four are ___. 4 and 4 are ___.
and 4 \[\frac{4}{8}\] and 4 \[\frac{4}{8}\] and 4 \[\frac{4}{8}\] and 4 \[\frac{4}{8}\] and 4 \[\frac{4}{8}\] and 4 \[\frac{4}{8}\] and 4 \[\frac{4}{8}\]

Color 8 balloons. Take away 4 balloons.
8 \[\frac{8}{8}\] take away \[\frac{4}{4}\] 8 \[\frac{8}{8}\] take away \[\frac{4}{4}\] 8 \[\frac{8}{8}\] take away \[\frac{4}{4}\] 8 \[\frac{8}{8}\] take away \[\frac{4}{4}\]
Draw 7 kites.

Color 6 kites orange. Color 1 kite red.

6 and 1 are 7. \[
\begin{array}{c}
6 \\
+1 \\
\hline
7
\end{array}
\]

6 and 1 are \[
\begin{array}{c}
6 \\
+1 \\
+1 \\
+1 \\
\hline
6
\end{array}
\]

Color one boat blue. Color six boats green.

1 and 6 are 7. 1 and 6 are \[
\begin{array}{c}
1 \\
+6 \\
\hline
7
\end{array}
\]

Take away 1 cat.

Color 7 cats red.

Take away \[
\begin{array}{c}
7 \\
\frac{1}{6} \\
\hline
7
\end{array}
\]

Color seven birds blue.

Take away six birds.

\[
\begin{array}{cccccccccccc}
6 & 1 & 7 & 7 & 1 & 7 & 1 & 4 \\
+1 & +6 & -1 & -6 & +6 & -1 & +6 & -1 \\
\hline
7 & 6 & 4 & 1 & 1 & 6 & 4 & 7
\end{array}
\]

\[
\begin{array}{cccccccccccc}
-1 & +1 & -2 & +6 & +1 & -4 & +4 & -6 \\
\hline
\end{array}
\]
eight dogs

Color 7 dogs black. Color 1 dog brown.

7 dogs and 1 dog are 8 dogs.

7 and 1 are 8. 7 and 1 are

---

Draw 7 tops.

Color 8 tops red. 1 top and 7 tops are 8 tops.

1 and 7 are 8.

1 and 7 are

---

8 houses

Color eight houses brown.

Take away one house.

---

eight birds

Color 8 birds blue.

Take away 7 birds.
Color 8 cups blue.
Color 1 cup green.

8 cups and 1 cup are 9 cups.
8 and 1 are 9. 8 and 1 are ____.

Draw 8 houses.

Color 9 houses brown.
1 house and 8 houses are 9 houses.

1 and 8 are 9.
1 and 8 are ____ 1 and 8 are ____.
nine cups

Color nine cups blue.
Take away \( \frac{1}{8} \)

Take away one cup.

9 tops

Color 9 tops orange.
Take away \( \frac{8}{1} \)

\[
\begin{array}{cccc}
9 & 9 & 1 & 8 \\
\text{9} & \text{9} & \text{1} & \text{8} \\
-8 & -1 & +8 & +1 \\
\end{array}
\]

\[
\begin{array}{cccc}
5 & 1 & 6 & 6 \\
\text{5} & \text{1} & \text{6} & \text{6} \\
+1 & +5 & -1 & -5 \\
\end{array}
\]

\[
\begin{array}{cccc}
3 & 2 & 5 & 5 \\
\text{3} & \text{2} & \text{5} & \text{5} \\
+2 & +3 & -2 & -3 \\
\end{array}
\]

Copyright, 1930, by The Macmillan Company
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**Airplane Race**

- 6 - 2, 6 - 4, 5 + 1, 2 + 4, 3 + 2, 5 - 3, 10 - 5, 6 - 3

Score: ________

To the teacher: See the instructions on page 83.
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To the teacher: This is a guide sheet to be used by the pupil in writing the numbers on the opposite page.
TO THE TEACHER: Instruct the pupil to write the missing numbers.

Copyright, 1904, by The Macmillan Company

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TO THE TEACHER: Direct the pupil to fill in the missing numbers.

Copyright, 1904, by The Macmillan Company
Write:

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To THE TEACHER: The pupil should continue this exercise until he is able to count by 5's to 100.
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To The Teacher: Instruct the pupil to write the missing numbers.

To The Teacher: Direct the pupil to fill in the missing numbers.
Write:

<table>
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<th>10</th>
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</table>

Draw four boys.

Color 9 boys blue.

Five boys and four boys are 9 boys.  
5 and 4 are 9.  5 and 4 are ___.

9 rabbits

Color 4 rabbits brown.  Color 5 rabbits black.

4 and 5 are 9.  
4 and 5 are ___.

To the teacher: The pupil should continue this exercise until he is able to count by 10's to 100.
Draw ten boys.

Color nine boys brown.

Color one boy blue.

Nine boys and one boy are ten boys.

9 and 1 are 10.

Nine and one are ___. 9 and 1 are ___.

Color 1 girl red.

Color 9 girls orange.

1 girl and 9 girls are 10 girls.

1 girl and 9 girls are ___ girls.

1 and 9 are 10.

1 and 9 are ___. 1 and 9 are ___.
10 balloons

Color ten balloons green.
Take away one balloon.

Take away $\frac{1}{9}$

10 dogs

Color 10 dogs brown.
Take away 9 dogs.

Take away $\frac{9}{1}$

Draw 5 rabbits.

Draw 2 rabbits.

Color 7 rabbits brown.

5 rabbits and 2 rabbits are 7 rabbits.

5 and 2 are ___. 5 and 2 are 7.

Draw 2 dogs.

Draw 5 dogs.

Color 7 dogs black.

2 and 5 are 7. 2 and 5 are ___.
7 tops

Color seven tops orange.
Take away two tops.

7 cats

Color 7 cats black.
Take away 5 cats.

\[
\begin{array}{cccc}
7 & 7 & 5 & 2 \\
-2 & -5 & +2 & +5 \\
\end{array}
\]

\[
\begin{array}{cccc}
7 & 7 & 2 & 7 \\
-5 & -5 & +5 & -2 \\
\end{array}
\]

\[
\begin{array}{cccc}
8 & 4 & 10 & 1 \\
+1 & -1 & +3 & -1 \\
\end{array}
\]

\[
\begin{array}{cccc}
10 & 9 & 9 & 5 \\
-4 & +5 & -4 & +2 \\
\end{array}
\]

\[
\begin{array}{cccc}
10 & 2 & 5 & 7 \\
-1 & +5 & +2 & -2 \\
\end{array}
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\[
\begin{array}{cccc}
7 & 5 & 2 & 2 \\
-2 & -5 & +5 & +2 \\
\end{array}
\]
### Bird Race

1. 4 1 9 7 1 1 8 5
   - 4 +6 -1 -6 +8 +7 -7 +5

2. 6 8 9 10 7 8 7 8
   -1 +1 +1 -1

Score:__________

To the Teacher: See the instructions on page 33.
Draw 6 rabbits.

Draw 3 rabbits.

Color 9 rabbits black.  
6 rabbits and 3 rabbits are 9 rabbits.  
6 and 3 are 9.  6 and 3 are ___.

6 and 3 are 9.  6 and 3 are ___.

Draw three apples.

Draw six apples.

Color nine apples red.  
3 apples and 6 apples are 9 apples.  
3 and 6 are 9.  3 and 6 are ___.
nine boats

Color six boats red.
Color three boats green.

6 boats and 3 boats are 9 boats.
6 and 3 are \[\frac{6 + 3}{9}\] .
6 and 3 are 9.

Draw 9 boys.

---

nine chairs

Color nine chairs blue.
Take away three chairs.
Take away \[\frac{3}{6}\] .

Color 9 balls orange.
Take away 6 balls.

\[
\begin{array}{cccccccc}
9 & 5 & 4 & 3 & 9 & 9 & 3 & 9 \\
-6 & -3 & +1 & +6 & -3 & -6 & +6 & -3 \\
9 & 6 & 5 & 5 & 9 & 7 & 5 & 8 \\
+1 & -1 & +2 & +4 & -5 & -2 & +5 & -4 \\
9 & 6 & 3 & 9 & 1 & 5 & 10 & 9 \\
-3 & +3 & +6 & -6 & +7 & +4 & -1 & -3 \\
\end{array}
\]
Draw 8 kites.

Draw two kites.

Color ten kites blue.  
8 kites and 2 kites are 10 kites.  
8 and 2 are 10.  8 and 2 are 10.

Draw 2 birds.

Draw 8 birds.

Color 10 balloons green.

Take away 2 balloons.

Color ten chairs orange.

Take away 8 chairs.
Draw three boys.

Color seven boys blue.
4 boys and 3 boys are 7 boys.
4 and 3 are 7. 
4 and 3 are ___.

Draw four balloons.

Color 7 balloons green.
3 balloons and 4 balloons are 7 balloons.
3 and 4 are 7. 
3 and 4 are ___.

Color 7 rabbits brown.
Take away 3 rabbits.

Take away $\frac{3}{4}$ - 3

Color seven dogs black.
Take away four dogs.

Take away $\frac{4}{3}$ - 4

7 7 3 4 6 7 7 4
-4 -3 +4 +3 -4 -3 -4 +3

1 4 3 5 1 7 7 2
+4 -3 +4 -4 +8 -3 -4 +4

-4 +3 -1 -8 +4 +1 -6 -8

10 7 9 8 3 9 10 4
-2 -6 -4 +2 +4 -5 -8 +3
Draw six trees.

Draw two trees. 6 6

Color eight trees brown. +2 +2 8

6 trees and 2 trees are 8 trees. 6 and 2 are 8. 6 and 2 are ___.

Draw 2 kites.

Draw 6 kites.

Color 8 kites blue. 2 2

2 kites and 6 kites are ___ kites. +6 +6 8

Color 8 balls orange. 8 8

Take away 2 balls. take away 2 -2 6

Color eight tops blue. 8 8
take away 6/2 -6

Take away six tops.

8 8 2 6 8 8 6 8
-6 -2 +6 +2 -2 -6 +2 -6

10 1 2 9 2 7 6 8
-8 +1 +6 -6 +5 -4 -4 -2

10 2 5 9 7 2 1 7
-2 +1 +4 -3 -2 +6 +2 -5
Color 6 cups blue. Color 2 cups orange.

8 cups are blue and orange.
6 and 2 are 8. 6 and 2 are __
6 and 2 are __. 2 and 6 are __
2 and 6 are 8. 2 and 6 are __

2 6 8 2 6 8 6 2
+6 +2 -6 +6 +2 -2 +2 +8

1 6 1 8 2 7 7 6
+3 -3 +9 -2 +3 -2 -5 +2

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

9 4 10 2 3 10 9 10
+1 +3 -9 +6 +6 -1 -6 -2

\[
\begin{array}{cccccccc}
8 & 2 & 4 & 3 & 8 & 8 & 2 & 7 \\
-2 & +6 & +3 & -1 & +2 & -7 & +8 & -4 \\
\end{array}
\]

\[
\begin{array}{cccccccc}
4 & 9 & 6 & 10 & 6 & 9 & 4 & 10 \\
+2 & -3 & +3 & -2 & +2 & -3 & +3 & -8 \\
\end{array}
\]

\[
\begin{array}{cccccccc}
2 & 9 & 2 & 10 & 8 & 3 & 7 & 6 \\
+6 & -6 & +8 & -8 & -2 & +2 & -3 & +3 \\
\end{array}
\]

\[
\begin{array}{cccccccc}
6 & 3 & 4 & 8 & 7 & 9 & 3 & 9 \\
+2 & -2 & +3 & -6 & -1 & -3 & +4 & -6 \\
\end{array}
\]

\[
\begin{array}{cccccccc}
10 & 2 & 8 & 3 & 7 & 2 & 8 & 5 \\
-5 & +8 & -6 & +6 & -3 & +6 & -2 & -2 \\
\end{array}
\]

\[
\begin{array}{cccccccc}
8 & 7 & 6 & 10 & 3 & 9 & 7 & 3 \\
+2 & -4 & +3 & -2 & +6 & -6 & +1 & +4 \\
\end{array}
\]
Automobile Race

Draw 5 apples.

Draw 3 apples.
Color 8 apples red.
5 apples and 3 apples are 8 apples.
5 and 3 are 8. 5 and 3 are ___.

Draw 3 birds.

Draw 5 birds.
Color 8 birds blue.
3 birds and 5 birds are 8 birds.
3 and 5 are ___. 3 and 5 are 8.
3 and 5 are ___.

Score

TO THE TEACHER: See the instructions on page 83.
Color eight chairs blue.
Take away three chairs.

Color 8 boats green.
Take away 5 boats.

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To the teacher: The combinations 5 + 3, 3 + 5, 8 − 3, and 8 − 5 may be reviewed in connection with Pack 7, at the end of the book.

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### Foot Race

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</table>

**Score**

To the Teacher: See the instructions on page 33.
Draw 9 kites.

Color 7 kites blue.  
7 2
+2 +7

Color 2 kites orange.

7 and 2 are 9. 7 and 2 are ___.
7 and 2 are ___. 2 and 7 are ___.
2 and 7 are 9. 2 and 7 are ___.

Draw six apples.

Draw four apples.

Color ten apples green.

6 apples and 4 apples are 10 apples.  
6 and 4 are 10. 6 and 4 are ___.

Draw 4 cups.

Draw 6 cups.

Color 10 cups blue.

4 cups and 6 cups are 10 cups.

4 and 6 are ___. 4 and 6 are 10.

4 and 6 are ___.

Draw 10 chairs.

Color 7 chairs red.
Color 3 chairs blue.
7 chairs and 3 chairs are 10 chairs.
7 and 3 are ____.
7 and 3 are ____.

Color 3 dogs brown.
Color 7 dogs black.
3 dogs and 7 dogs are ____ dogs. 3 and 7 are 10.
7 dogs and 3 dogs are ____ dogs. 7 and 3 are 10.
Speedboat Race

Write:

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Score

To the teacher: Direct the pupil to fill in the missing numbers.

To the teacher: See the instructions on page 33.
Write:

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To the Teacher: The pupil should continue this exercise until he is able to count by 2's to 100.
### Combination Dictionary

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### Table and Progress Chart

#### Table

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#### Progress Chart

- **My Progress Chart**
  - Pack 1: 1's to 100
  - Pack 2: 10's to 100
  - Pack 3: 5's to 100
  - Pack 4: 2's to 100
  - Pack 5: Pack 7
  - Pack 6: Pack 7
SELF-HELP NUMBER SERIES
IN NUMBER LAND

Draw
Color
Write

red and blue

Take away
1 ball is left.
cat
2 balls are red.

CUSHMAN
MACMILLAN COMPANY