

# MATH

Teacher's Guide

► **Kindergarten**

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# MATH KINDERGARTEN

## Teacher's Guide

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# INSTRUCTIONS FOR KINDERGARTEN MATH

The teacher instruction pages contain the objectives (concepts) to be taught in each lesson along with directions for teaching the corresponding student workbook pages. The activities included in the teaching page section that precede or follow the workbook assignments are used to reinforce or expand the concepts taught and are an integral part of the learning experience.

Students learn letter formation and penmanship in their reading and spelling programs. Because this is not a primary focus of math, the math curriculum begins immediately with the five-eighths separation between the bold writing lines along with the dotted guide line for lowercase letters.

Math is a subject that requires skill mastery, but skill mastery needs to be applied toward active student involvement. A list of materials/ manipulatives is provided on each instruction page. A complete list for the entire *Kindergarten Math* curriculum is included in this section.

The *Introduction of Skills* that appears in this section is a quick reference guide for the teacher who may be looking for a rule or explanation that applies to a particular skill or to find where or when certain skills are introduced in the curriculum. The skills are grouped by Lessons (1–40, 41–80, 81–120, 121–160) for a convenient teacher reference during student evaluation.

**MATH K INTRODUCTION OF SKILLS: LESSONS 1-40**

<b>CONCEPT</b>	<b>LESSON</b>	<b>CONCEPT</b>	<b>LESSON</b>
Before and after	33, 37-40	Ordinal (order) numbers	
Colors		first – fifth	19
red, yellow, green, blue	1	sixth – ninth	27
brown	7	Problem solving/critical thinking	
purple	23	concentration	30, 32
Comparisons		estimate enough objects	
big, little, alike, different	2-5, 7-8, 11, 14-15, 18, 20-21, 25, 26, 34, 38	to make sets 1-5	22
Counting		estimate enough objects	
1-5	9	to make sets 6-9	36
6-9	25	can you select objects	
Following directions		up to 9	35
right, left, high, low, top, bottom, middle, above, below, inside, outside	1, 5, 14-15, 34	Shapes	
Matching	6-9, 11, 15, 18, 20-21, 26, 30, 33	circle, triangle, square, rectangle	3, 6, 7, 10-11, 15, 20-21, 23, 36-37, 39-40
Number order		Write the number symbol	
1-9	38-40	1-5	12
		6-9	28

## MATH K INTRODUCTION OF SKILLS: LESSONS 121–160

CONCEPT	LESSON	CONCEPT	LESSON
Addition	130	Ordinal numbers	138
Before and after	131–132, 139, 140, 144, 147, 155, 157	Place value 1's and 10's	127
Colors pink	134	Problem solving/critical thinking concentration	121–122
Comparison big, little, alike, different	138, 157	story problems	146, 160
Counting 20–50	126	patterns and sequencing	138, 157
51–99	143	Shapes circle, triangle, square, rectangle	138
Following directions right, left, high, low, top, bottom, middle, above, below, inside, outside	156	Skip counting 10's	146
Greater than, less than 1–50	141, 142	2's	147
1–99	156, 160	5's	148
Money pennies	135–136, 151–154, 158	Subtraction 1–10 vertical	125
dimes	136, 152–154, 158	Time/calendar hour	133, 140, 150, 159
Number(s) between	123, 129–130, 155, 157	half-hour	133–134, 139, 140, 150, 159
Number order 20–50	126	months	127, 134, 139, 140, 159
51–99	143	Write the number symbol 20–50	126
		51–99	143

## LESSON 2

### MATERIALS NEEDED

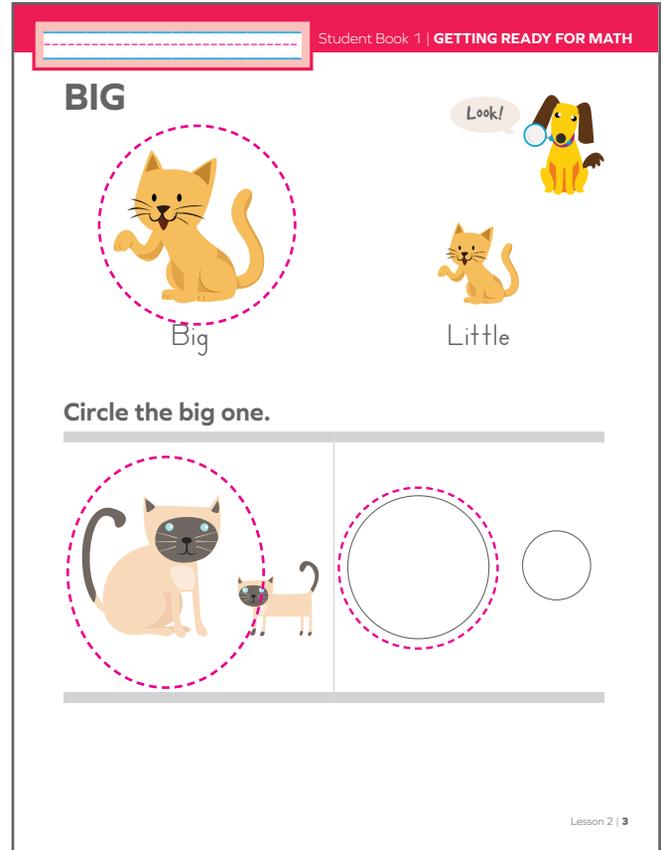
- pencils
- pictures illustrating big and little (animals, children, toys, plants, houses, and so on) or objects illustrating big and little (two sizes of marshmallows, blocks, toy trucks, and so on)
- red, yellow, green, and blue crayons

### Objectives:

1. To distinguish between big and little.
2. To use colors.
3. To identify the big object.

### Teaching Pages 3 and 4:

1. Use the pictures or the collection of objects to begin a class discussion about big and little. Give each child an opportunity to touch and handle the pictures and objects. Ask: "Which of these items are alike?" "Which are different?" "How are they different?" "Which item is the big one?" Have the children look for big and little items in the classroom.
2. When you are sure that each child understands the concept of big and little, have the children open their workbooks to page 3. Read the title of the page to them. Discuss the meaning of the word *circle* and make sure each student understands how to draw one. Have the children look at the two cats in the middle of the page. Decide which cat is the big one and have the students draw a red circle around it. Look at the cats and the circles at the bottom of the page. Tell the students to circle the big cat and the big circle using a red crayon.



3. Turn to page 4. Ask the children to identify the color of the turtles (green), the pencil eraser (red), shoes (blue), and the braided hair (yellow). Ask them if they can find these colors anywhere else on the page. Have them look at each pair of items. Ask questions: "How are these two items alike?" (Both are turtles.) "How are these two items different?" (Different sizes) "Which item is the big one?" (Point) After doing this with each pair of items, read aloud the instructions at the top of the page. Have the children complete the page independently. Then, tell the children they may color the cats and circles on page 3 using any of the colors red, yellow, green, or blue.

GETTING READY FOR MATH | Student Book 1

Now you try!

Put a circle around the big one.

4 | Lesson 2

# LESSON 40

## MATERIALS NEEDED

- pencils
- red, yellow, green, blue, brown, and purple crayons

### Objectives:

1. To write numbers to 9 in order.
2. To count using ordinal numbers and tally marks.
3. To write the numbers before and after.
4. To illustrate using shapes and colors.

### Teaching Pages 91, 92, and 93:

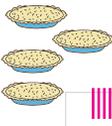
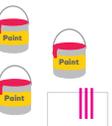
1. Turn to pages 91, 92, and 93. Pages 91, 92, and 93 are very similar to pages 88, 89, and 90. They will allow the teacher and students another opportunity to review the skills covered on those pages. Read the set of directions and have the children complete the exercise. In the first exercise, the students are asked to write the numbers to 9. When they have completed this exercise, ask them to put their fingers on the first box and say aloud, "This is the \_\_\_ box" (first), "This is the \_\_\_ box" (second), "This is the \_\_\_ box" (third), and continue through the ninth box. Complete the remainder of pages 91, 92, and 93.

Student Book 1 | GETTING READY FOR MATH

**Write the numbers to 9.**

→	1	2	3	4	5
	6	7	8	9	

**Make a mark for each one.**

**Write the number before.**

6 7    4 5    5 6    1 2    7 8

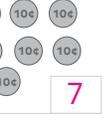
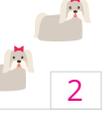
**Write the number after.**

5 6    1 2    8 9    2 3    3 4

Lesson 40 | 91

GETTING READY FOR MATH | Student Book 1

**Write the number for the set.**

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

92 | Lesson 40

# LESSON 51

## MATERIALS NEEDED

- pencils
- objects for counting

### Objectives:

1. To add four objects to a set.
2. To add number facts to 9 vertically.

### Teaching Pages 116 and 117:

1. Review the addition facts through 9. Give the students any set of objects up to seven. Ask them to add one, two, or three to the different sets. (Do not exceed a total of 9.) Encourage them to picture the objects in their minds before giving the answer. Continue to give them the objects for counting if necessary to achieve the correct answer. Spend several minutes on this exercise. As they are able to answer more each day without using the objects for counting, let them know that they are making good progress.
2. Turn to page 116. Tell the students that today they will learn to add 4 to a set. Use the objects as manipulatives to illustrate each exercise on page 116. Call the students' attention to the number facts in the center of the page. Have the students read each fact aloud before going on to the next example.
3. Turn to page 117. Ask the students to read the problem. (2 plus 4) Tell the students to make a set of 2 and a set of 4 and add them together. (6) Write the answer below the line. Read the problem again. (2 plus 4 equals 6.) Proceed in the same manner to complete page 117.

## ADD TO 9

Look!



Add 4 s to the set.

2  
add  $\begin{array}{r} +4 \\ \hline \end{array}$  6

3  
add  $\begin{array}{r} +4 \\ \hline \end{array}$  7

4  
add  $\begin{array}{r} +4 \\ \hline \end{array}$  8

5  
add  $\begin{array}{r} +4 \\ \hline \end{array}$  9

Write the number in the .

Write!



2	3	4	5	3	5
+4	+4	+4	+4	+4	+4
<input type="text" value="6"/>	<input type="text" value="7"/>	<input type="text" value="8"/>	<input type="text" value="9"/>	<input type="text" value="7"/>	<input type="text" value="9"/>
4	2	4	3	2	4
+4	+4	+5	+4	+4	+4
<input type="text" value="8"/>	<input type="text" value="6"/>	<input type="text" value="9"/>	<input type="text" value="7"/>	<input type="text" value="6"/>	<input type="text" value="8"/>
5	6	7	8	2	3
+1	+1	+1	+1	+2	+2
<input type="text" value="6"/>	<input type="text" value="7"/>	<input type="text" value="8"/>	<input type="text" value="9"/>	<input type="text" value="4"/>	<input type="text" value="5"/>
4	5	6	7	2	3
+2	+2	+2	+2	+3	+3
<input type="text" value="6"/>	<input type="text" value="7"/>	<input type="text" value="8"/>	<input type="text" value="9"/>	<input type="text" value="5"/>	<input type="text" value="6"/>
4	5	6	3	4	5
+3	+3	+3	+4	+4	+4
<input type="text" value="7"/>	<input type="text" value="8"/>	<input type="text" value="9"/>	<input type="text" value="7"/>	<input type="text" value="8"/>	<input type="text" value="9"/>

# LESSON 70

## MATERIALS NEEDED

- pencils
- paper
- objects for counting
- fact cards for 0's, 1's, 2's

### Objectives:

1. To use fact cards for 0's, 1's, 2's.
2. To write the number words to nine.
3. To learn number order.
4. To recognize colors and shapes.

### Teaching Pages 158 and 159:

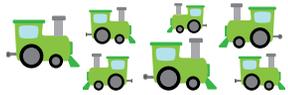
1. Review the fact cards for 0's, 1's, and 2's. Always begin fact card time with the facts being presented in order and always allow the students to have objects for counting when necessary. If the students know the facts in order and do not require objects for counting, scramble the fact cards and present them in any order.
2. Turn to page 158. Read the directions aloud. Have the children point to the first set and count the planes. Then point to the number words and read them aloud. Tell them to write the number symbol and the number word. Complete the page in this manner.
3. Turn to page 159. Ask the students to read the number symbols and the number words in the two columns. Then review number order in this way. Point to the first column and have them say with you, "This is the first number (6), this is the second number (3)" and so on down the list of numbers. If children become confused, use the cards with the numbers 1-9 written on them. Take the number 6 and say, "This is the first number we have taken." Ask them to name the next number (3), take it from the group and say, "This is the second number we have taken" and so on to zero. Read

GETTING READY FOR MATH | Student Book 1

Write the number symbols and number words.

0	1	2	3	4	5	6	7	8	9
zero	one	two	three	four	five	six	seven	eight	nine

---

	<u>2</u> two
	<u>6</u> six
	<u>4</u> four
	<u>7</u> seven
	<u>9</u> nine

158 | Lesson 70

Student Book 1 | GETTING READY FOR MATH

Match the number with the word.

⑥	zero
③	three
⑧	one
①	seven
④	five
⑨	two
②	four
⑦	eight
⑤	six
⑩	nine

How many number symbols are in ...

circles	<u>2</u>
squares	<u>4</u>
triangles	<u>2</u>
rectangles	<u>2</u>

Write a number word that is ...

blue	<u>five</u>	purple	<u>three or eight</u>
brown	<u>one</u>	orange	<u>zero or six</u>
red	<u>four</u>	yellow	<u>two or nine</u>
green	<u>seven</u>		

Write the number symbols in order.

0 1 2 3 4 5 6 7 8 9

Lesson 70 | 159

# LESSON 87

## MATERIALS NEEDED

- pencils
- objects for counting
- cards with number symbols 0 through 9 from Lesson 30
- number words zero through nine from Lesson 86

### Objectives:

1. To subtract three objects from a set to 9.
2. To find the missing number.
3. To find the number that comes before and after.
4. To put numbers in number order.

### Teaching Pages 14 and 15:

1. Place sets of 9, 8, 7, and 6 objects in front of the students. Ask the students to take away (subtract) three objects from each set and tell how many are left.
2. Turn to page 14. Read the directions on the page. Tell the children to count the blocks in the sets. Explain to them that three blocks are being taken away and have them count the number left. Ask them to compare these sets to the sets of objects they were working with. Point to the number facts in the center and have the students identify the minus sign. Ask the students to read the number facts. (nine minus three equals six)
3. Turn to page 15, and have the students complete the page using objects for counting.
4. Use the number symbol and number word cards to play a *before* and *after* or *missing number* game. Place two number symbol cards (3 and 5) in front of the students. Ask them to find the missing number word card and put it in the correct place. Select a number word card (seven) and ask the students to select the number symbol cards

GETTING READY FOR MATH | Student Book 2

## SUBTRACT TO 9

Look!

Subtract 3 blocks from the set.

	$\begin{array}{r} 9 \\ -3 \\ \hline 6 \end{array}$	
	$\begin{array}{r} 8 \\ -3 \\ \hline 5 \end{array}$	
	$\begin{array}{r} 7 \\ -3 \\ \hline 4 \end{array}$	
	$\begin{array}{r} 6 \\ -3 \\ \hline 3 \end{array}$	

14 | Lesson 87

Student Book 2 | GETTING READY FOR MATH

You try it!

Write the number in the .

$\begin{array}{r} 6 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ -3 \\ \hline \end{array}$
3	4	5	6	4	6
$\begin{array}{r} 8 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ -3 \\ \hline \end{array}$
5	3	6	5	4	6
$\begin{array}{r} 6 \\ -1 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ -1 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ -1 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ -1 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ -2 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ -2 \\ \hline \end{array}$
5	6	7	8	4	5
$\begin{array}{r} 8 \\ -2 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ -2 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ -3 \\ \hline \end{array}$
6	7	3	4	5	6
$\begin{array}{r} 5 \\ -3 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ -2 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ -2 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ -1 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ -2 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ -3 \\ \hline \end{array}$
2	1	3	4	2	1

Lesson 87 | 15

# LESSON 102

## MATERIALS NEEDED

- pencils
- objects for counting
- addition fact cards to 9

### Objectives:

1. To count to 16.
2. To learn about place value for 1's and 10's.

### Teaching Pages 49 and 50:

1. Turn to page 49. Have the students read the numbers at the top of the page. Ask if the numbers are in number order. (yes) Read the directions at the top of the page. Tell the class to point to the set of tricycles. Have them make the marks for this set and circle the number at the top of the page. Have them complete the other three sets in the same way. Read the second set of directions with the students. Have the students count the marks out loud and draw a circle around ten marks. Ask the students, "How many sets of tens?" (1) Have the children write the number 1 in the box. Ask them, "How many more?" (3) Have them write the 3 in the box. Ask them to read the number. (13) Follow the same steps to complete the page.
2. Turn to page 50. Tell the children to point to the first set of ducks and then follow the same procedures for 15 and 16 as they did in Lesson 101. Read the next set of directions with the students. Tell the students to count the marks out loud and draw a circle around ten marks. Ask the students, "How many sets of tens?" (1) Have the children write the number 1 in the box. Ask them, "How many more?" (4) Have them write the 4 in the box. Ask them to read the number. (14) Follow the same steps to complete the page.

Student Book 2 | GETTING READY FOR MATH

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

**Make a mark for each one.**

**Write the number in the .**

	<input type="checkbox"/> 13		<input type="checkbox"/> 11
	<input type="checkbox"/> 10		<input type="checkbox"/> 14
	<input type="checkbox"/> 11		<input type="checkbox"/> 12
	<input type="checkbox"/> 12		<input type="checkbox"/> 10
	<input type="checkbox"/> 14		<input type="checkbox"/> 13

Lesson 102 | 49

GETTING READY FOR MATH | Student Book 2

Count  
1, 2, 3, 4, 5, 6, 7, 8, 9, 10,  
11, 12, 13, 14, 15

Mark

**15**  
Number

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

Mark

**16**  
Number

**Write the number in the .**

	<input type="checkbox"/> 14		<input type="checkbox"/> 11
	<input type="checkbox"/> 10		<input type="checkbox"/> 12
	<input type="checkbox"/> 13		<input type="checkbox"/> 14
	<input type="checkbox"/> 16		<input type="checkbox"/> 15

50 | Lesson 102

# LESSON 134

## MATERIALS NEEDED

- pencils
- clock made in Lesson 93
- current calendar
- paper
- scissors
- paste or glue
- crayons through white
- pink crayon

### Objectives:

1. To tell the time of the half-hour.
2. To make a calendar.

### Teaching Pages 117 and 118:

1. Turn to page 117. Read the caption and instructions out loud. Have the children point to the first clock. State, "The long hand is on the six. What number is the short hand on? What time is it?" Point out to the class that the small hand moves with the long hand. Show the clockwise movement. Explain to the children that the hour is always the number that the short hand is moving *away from*. Have the class write the correct number on the line and say the answer aloud. Allow the children to complete this page independently.
2. Introduce the *current* calendar to the children, and review the current year, months, and days of week. Ask the students to select their favorite month (perhaps the months of their birthdays).
3. Turn to page 118. Compare the graph on page 118 to the month of each student's birthday on the *current* calendar. Tell them they are going to make a calendar page just like the months of their birthdays. Read the directions and have the children write the name of the month and the year on the blank lines. Ask the children to point to the days of the week while you say the names

Student Book 2 | GETTING READY FOR MATH

Tell time at the half-hour ~~without~~ the word *o'clock!* 

Write the number on the \_\_\_\_\_.

  
4 :30

  
1 :30

  
9 :30

---

  
12 :30

  
2 :30

  
8 :30

---

  
3 :30

  
10 :30

  
5 :30

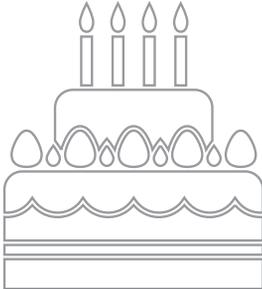
Lesson 134 | 117

GETTING READY FOR MATH | Student Book 2

Make a calendar. Teacher Check

\_\_\_\_\_ Month \_\_\_\_\_ Year

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday



118 | Lesson 134

## LESSON 155

### MATERIALS NEEDED

- pencils
- chart of numbers to 99

### Objectives:

1. To write number words and number facts.
2. To tell numbers before, after, and between.

### Teaching Pages 161 and 162:

1. Turn to page 161 and read the directions at the top of the page aloud. Have the children point to the lines. Dictate the number words *zero* through *nine* to the children while they write them on the lines. Read the second set of directions. Tell the children that you will dictate four number facts to them and that they should write the number facts in the boxes. Tell them to write neatly, to write the correct sign, and to remember to draw the line between the problem and the answer.

Dictate: Six minus two equals four.

$$\begin{array}{r} 6 \\ -2 \\ \hline 4 \end{array} \quad \begin{array}{r} 9 \\ -6 \\ \hline 3 \end{array} \quad \begin{array}{r} 4 \\ +5 \\ \hline 9 \end{array} \quad \begin{array}{r} 7 \\ +1 \\ \hline 8 \end{array}$$

2. Turn to page 162. Read the first direction and have the children point to the first number. (9) Tell them to find the number on their number chart and say aloud the number that is before and the number after. Have them write the numbers on the lines. Read the second set of directions. Have the children point to the first set of numbers (7-9). Tell them to find the numbers on their number chart and say aloud the number that is between. Have them write the number on the line. Read the third direction and have the students find 19 on the number chart, then have them write the number after. Those students who understand the directions may complete the page independently. Others may require help as they complete each section.

Student Book 2 | GETTING READY FOR MATH

**Write the number words.**

zero, one, two, three,  
four, five, six, seven,  
eight, nine

**Write the number facts.**

$\begin{array}{r} 6 \\ -2 \\ \hline 4 \end{array}$	$\begin{array}{r} 9 \\ -6 \\ \hline 3 \end{array}$
$\begin{array}{r} 4 \\ +5 \\ \hline 9 \end{array}$	$\begin{array}{r} 7 \\ +1 \\ \hline 8 \end{array}$

Lesson 155 | 161

GETTING READY FOR MATH | Student Book 2

**Write the number before and the after.**

<u>8</u> 9 <u>10</u>	<u>52</u> 53 <u>54</u>
<u>23</u> 24 <u>25</u>	<u>66</u> 67 <u>68</u>
<u>37</u> 38 <u>39</u>	<u>77</u> 78 <u>79</u>
<u>48</u> 49 <u>50</u>	<u>81</u> 82 <u>83</u>

**Write the number between.**

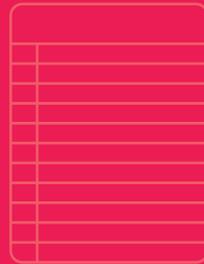
7 <u>8</u> 9	56 <u>57</u> 58
14 <u>15</u> 16	62 <u>63</u> 64
27 <u>28</u> 29	87 <u>88</u> 89
30 <u>31</u> 32	95 <u>96</u> 97

**Write the number.**

after 19 <u>20</u>	before 60 <u>59</u>
before 30 <u>29</u>	after 71 <u>72</u>
after 42 <u>43</u>	after 89 <u>90</u>
after 59 <u>60</u>	before 99 <u>98</u>

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