



# First Grade

## Color Math

### Teacher's Manual Samples

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The curriculum consists of:

### **Teacher’s Manual, Resource Pack, and Workbook**

Manipulatives are available as a separate kit from McRuffy Press. If you purchased the Kindergarten manipulatives, a kit consisting of just the additional materials needed is available at a reduced cost. McRuffy Press also sells all items separately, as well as many other math, science, and language arts materials. The list of manipulatives states the largest quantity used (and quantity in math kit).

Contact us at:

## **Manipulatives**

Quantity	Manipulative
100	Centimeter cubes
25	Animal counters
20	Base ten rods
12	One inch cubes
1	Geoboard
50	Pattern blocks
1	Tangram set (7 pieces)
1	Clock face
250	Color chips
2	Dice
6	Playing pieces (Pawns)
1	Dry erase marker (not included in manipulative kit)
1	Ruler (not included in the manipulative kit)

## **Resource Pack**

The resource pack contains many materials.

Tests and copy masters may be reproduced for this curriculum.

The resource pack also includes 5 games. The games are introduced in the lessons noted on the game boards. The games can be used in any lesson after their introduction for additional review or just for fun.

Game	Lesson
Hot Rods	46
Skippy the Kangaroo	66
Coin Mark-Off	80
Round Off	130
About Time	140

The resource pack also includes 114 pre-cut cards plus other cards that will need to be cut out such as attribute shapes and hundreds flats.

# Scope and Sequence

## Unit 1 (Lessons 1-41)

Number review  
Addition review  
Patterns  
Geometric designs  
Inequalities  $<$ ,  $>$   
Number words  
Counting coins (1, 5, 10)  
Charting and Graphing  
Time (hour and half-hour)  
Counting by 2, 5 and 10  
Measuring  
Place Value 10's 1's

## Unit 2 (Lessons 42-91)

Number writing  
Regrouping  
Geometric designs  
Addition (2-digit)  
Estimate area  
Attributes  
Inequalities  
Coin counting (1, 5, 10, 25)  
Time (hour and half hour)  
Number words to 20  
Place value to hundreds  
Charting and graphing  
Skip counting  
Missing addends  
Counting to 400  
Measuring (centimeters)  
Thermometer reading  
Labeling patterns

## Unit 3 (Lessons 92-121)

Subtraction (2-digit)  
Symmetry  
Addition (3 addends)  
Number writing  
Charting and graphs  
Time to the half-hour  
Measuring (inches and centimeters)  
Skip counting  
Geometric designs  
Coin counting  
Thermometer reading  
Inequalities  $>$ ,  $<$   
Attributes  
Place value  
Pints, quarts, ounces  
Feet, yards, inches

## Unit 4 (Lessons 122-160)

Halves  
Geometric designs  
Addition 3 numbers  
Addition 2-digit with regrouping  
Addition 3-digits  
Estimate time  
Rounding to the nearest 10  
Subtraction 2-digit and 3-digit  
Charts and graphs  
Coin counting  
Geometric designs  
Estimating temperatures  
Clock reading to half-hour  
Odd and even  
Skip counting by 100  
Time estimation  
More and less than half  
Measuring  
Multiplication by 2  
Commutative property

Objectives

1. Students will review place value.
2. Students will review numbers 1 to 40.

Materials

Workbook page  
Counters

Teaching

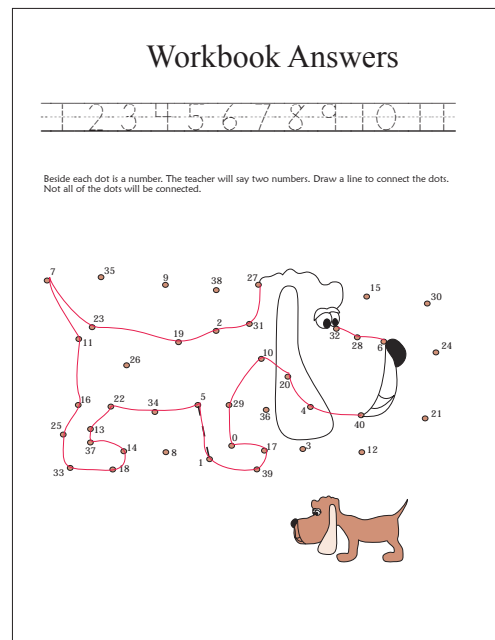
1. Have students make a group of 8 counters. **What number could you write to show the number of counters in the group?** (8) Repeat for 5 counters. **What number could you write to show the number of counters in the group?** (5) Repeat for 10 counters. **What number could you write to show the number of counters in the group?** (10) **When you wrote the number for the smaller groups it only took 1 digit. For this group you have to write two digits, a 1 and a 0. Why?** (The 1 means 1 ten. The 0 means 0 ones.) Write the number 16. **How many tens and ones are in this number?** (1 ten and 6 ones). Write the number 35. **How many tens and ones are in this number?** (3 tens and 5 ones)

Repeat with other numbers.

2. Write the numbers 23, 37, 12. **What are these numbers?** Write the numbers 18 and 20 leaving a blank between them. **What are these two numbers? What number comes between them, after 18 and before 20?** (19) **What number comes before 18?** (17) **What number comes after 20?** (21)

Use the workbook page. Start by having students trace the numbers 1 to 11 at the top of the page.

Next, have students make a picture by connecting dots. This is not a typical connect the dots exercise where students follow the number sequence. Instead, students will listen for pairs of numbers to draw lines between. Not all the dots will be used.



**Look at the dots and numbers at the bottom of the page. I will say two numbers. Draw a line between the dots next to those numbers. Draw a line between dots 1 and 5. Notice this time there is a line to trace.**

**Next, draw a line between 5 and 34.** Continue numbering points in this order 34 to 22 to 13 to 37 to 14 to 18 to 33 to 25 to 16 to 11 to 7 to 23 to 19 to 2 to 31 to 27. **Next find dot 32 draw a line to dot 28 to 6. Next, go back to dot 1. Draw a line to dot 39.** Continue from 39 to 17 to 0 to 29 to 10 to 20 to 4 to 40.

## Lesson 2

### Objectives

1. Students will write numbers 12 to 18.
2. Students will write addition problems.
3. Students will use the commutative property.

### Materials

Counters  
Workbook page

### Teaching

1. Review place value for the numbers at the top of the workbook page. For example, 12 is 1 ten and 2 ones. Next, students will trace the numbers.
2. Ask students to make a group of 4 counters and a group of 2 counters. **Add the two groups. How many counters are there altogether? Can you make an addition problem out of this? ( $4 + 2 = 6$ ) This time, make two more groups. What is your addition problem for the groups?** Repeat several more times, telling students what groups to form or having them make their own groups and addition problems.

Use the bottom of the workbook page. **Look at the groups of pictures on the workbook page. Write addition problems for the groups. Look at the example. There is a group of 6 stars and a group of 3 stars. How many stars are there altogether? (9) Trace the numbers in the addition problem. Read the addition problem. ( $6 + 3 = 9$ )**

**Write addition problems for the other groups.**

3. Write the problems  $2 + 3$  and  $3 + 2$ . **How are these two problems different?** (The numbers are in a different order.) **How are the two problems alike?** (They have the same numbers.) **Will they have the same sum?** (yes) **Let's model each problem using counters.** Students should make a group of 2 counters and then 3 counters to model the first problem and a group and 3 counters and 2 counters to model the second problem.

Write the problems  $1 + 6$  and  $6 + 1$ . **What is the sum of  $1 + 6$ ? (7) Does the problem  $6 + 1$  have the same sum?** (yes)

**What can you say about problems that are adding the same numbers?** (The order of the numbers does not matter.)


**This is called the commutative property of addition. The numbers in an addition problem can be added in any order. It doesn't change the sum.**


**Write five addition problems, such as  $2 + 3 = 5$ . For each of those problems write another problem using the commutative property. For  $2 + 3 = 5$ , the second problem would be  $3 + 2 = 5$ .**


Workbook Answers


2 3 4 5 6 7 8


Write a number sentence for each group.


Example:   $6 + 3 = 9$


  $3 + 5 = 8$

  $3 + 3 = 6$

  $1 + 2 = 3$

  $5 + 5 = 10$

  $8 + 6 = 14$

  $5 + 6 = 11$

## Objectives

1. Students will write numbers 12 to 18.
2. Students will solve addition problems adding zero.
3. Students will label patterns.
4. Students will learn to take a timed test.

## Materials

Pattern blocks  
 Workbook page  
 +0 timed test

## Teaching

1. Review place value for the numbers at the top of the workbook page. For example, **How many tens and ones are in each number?** (19 is 1 ten and 9 ones. 20 is 2 tens and 0 ones, etc.) Next, students will trace the numbers.
2. Write a zero on a piece of paper or a chalkboard. Ask the students to name the number. Next say, **hold up two fingers on one hand. On the other hand hold up zero fingers. How many fingers are you holding up all together?** Repeat for zero and three fingers. Write the problem  $0 + 3 = 3$ . Review the = and + signs. Rewrite the problem in the vertical format (like the problems on the workbook page). Write several other problems pointing out that 0 plus any other number equals that number.

Have students solve the row of 0+ addition problems on the workbook page.  $\begin{array}{r} 2 \\ +0 \\ \hline \end{array}$

On a blank piece of paper have students write a problem for each of the workbook problems that would demonstrate the commutative property of addition. An example for the first problem would be:  $\begin{array}{r} 2 \\ +2 \\ \hline \end{array}$

3. Have students use two blue rhombus and two red trapezoid pattern blocks to make an alternating pattern (AB pattern). **Look at the bottom of the workbook page. See the red and blue squares. How is this pattern like the pattern you made with the pattern block pieces?** (Answers vary – sample answers – they both go red, blue, red, blue. They switch each time.)

**We can use letters to label the patterns. The first part in the pattern is A, the next part is B. In the example, the blue square is A. The red square is B. The letters are used again if the shape is used again. Trace the letters in the example to label the pattern.**

**Look at the next pattern. It has a yellow circle, red hexagon, and a purple circle. How would you label that pattern with letters? (ABC) Since there were three different objects, we had to use the letter C for the third shape. Can you make an ABC pattern with the pattern blocks?**

Repeat for the other patterns: pigs and turtles ABBA, mice AABB, triangle rectangle and stars ABCC, cone cylinder square star ABCD, bee dog frog dog ABCB. Have students make patterns with pattern blocks.

Lesson continued on next page.

## Lesson 3

- Hold up the timed test and explain that there are ten problems on the test that all have zero in them. Tell the children that they will be timed. Encourage them to work quickly. Insist that numbers be written correctly (not backward). Write the digits 0-9 on the board or paper if necessary. Vary the time you give the children to finish the test (3 minutes is a safe time to start).

The purpose of the timed tests is to encourage children to memorize basic addition facts rather than relying on counting methods. Nevertheless, use the tests to challenge, not frustrate the students. As a part of the routine, pass tests out face down. Have the child write his or her name on the back. Give a signal to start and stop the test.

Timed Test

$\begin{array}{r} 0 \\ +2 \\ \hline 2 \end{array}$	$\begin{array}{r} 0 \\ +5 \\ \hline 5 \end{array}$	$\begin{array}{r} 0 \\ +1 \\ \hline 1 \end{array}$	$\begin{array}{r} 0 \\ +8 \\ \hline 8 \end{array}$	$\begin{array}{r} 0 \\ +3 \\ \hline 3 \end{array}$
$\begin{array}{r} 0 \\ +0 \\ \hline 0 \end{array}$	$\begin{array}{r} 0 \\ +4 \\ \hline 4 \end{array}$	$\begin{array}{r} 0 \\ +9 \\ \hline 9 \end{array}$	$\begin{array}{r} 0 \\ +6 \\ \hline 6 \end{array}$	$\begin{array}{r} 0 \\ +7 \\ \hline 7 \end{array}$

40

Workbook Answers







19 20 21 22 23 24 25

Solve the addition problems. Use counters to help find the sums.

$\begin{array}{r} 0 \\ +2 \\ \hline 2 \end{array}$	$\begin{array}{r} 0 \\ +4 \\ \hline 4 \end{array}$	$\begin{array}{r} 0 \\ +7 \\ \hline 7 \end{array}$	$\begin{array}{r} 0 \\ +5 \\ \hline 5 \end{array}$	$\begin{array}{r} 0 \\ +9 \\ \hline 9 \end{array}$
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Label the patterns.

Example:  $\overline{ABAB}$

 $\overline{ABC}$	 $\overline{ABBA}$
 $\overline{AABB}$	 $\overline{ABCC}$
 $\overline{ABCD}$	 $\overline{ABCB}$



Objectives

1. Students will count orally from 1 to 30.
2. Students will write numbers from 26 to 32.
3. Students will make a chart.
4. Students will solve addition problems.

Materials

- 1 to 100 Number Chart (copy master)
- Workbook page
- 100 circle counters in a paper sack (approximately)

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

1-100 Number Chart

Teaching

1. Have the students count out loud. Use the number chart. After counting to thirty, point to numbers at random and have the children identify them. Have students identify how many tens and ones are in each number.
2. Students will read and trace the numbers 26 to 32 on the top of the workbook page.
3. Put 100 circle counters in a paper sack. Have the children use the chart on the workbook page. The children should draw out a handful of counters. Have the children count the circle counters and write the total under the number one on the chart. Put the counters back in the sack and repeat four more times filling in the chart. Ask the children questions such as:

- Which time did you draw the most counters?**
- Which time did you draw the least counters?**
- Did you ever draw less than 5?**
- Did you ever draw more than 20?**
- What was the greatest amount of counters that you drew at one time?**
- What was the least amount of counters that you drew at one time?**
- How many counters did you draw the first (second, third, etc.) time?**

4. Students will solve the addition problems on the bottom of the workbook page using counters if necessary to make groups for each addend and counting the total for the sum.

On a blank piece of paper have students write a problem for each of the workbook problems that would demonstrate the commutative property of addition. For example:

$$\begin{array}{r} +2 \\ 7 \end{array}$$

Review the term commutative property (numbers can be added in any order in an addition problem.)

Workbook Answers

~~26~~ ~~27~~ ~~28~~ ~~29~~ ~~30~~ ~~31~~ ~~32~~

Draw counters five times. Count the number in each draw and write the totals in the boxes.

1	2	3	4	5

Solve the addition problems. Use counters to help find the sums.

2	3	6	9	4
+5	+3	+2	+1	+1
<u>7</u>	<u>6</u>	<u>8</u>	<u>10</u>	<u>5</u>



## Lesson 5

### Objectives

1. Students will take a timed test.
2. Students will write numbers.
3. Students will add numbers.

### Materials

Timed Test 0+  
Workbook page  
Counters

### Teaching

1. Repeat timed test directions from Lesson 3.
2. Use the workbook page. Begin by have students read the numbers 33 to 39 telling how many tens and ones are in each number. Next, trace the numbers.

Next, give the children the following directions: **I will say a letter and a number. Write the number in the box that is to the right of the letter. In box a write the number 25.**

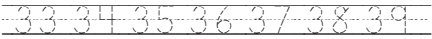
a. 25      b. 41      c. 18      d. 47  
e. 12      f. 8      g. 50      h. 32

3. Students will solve the addition problems on the bottom of the workbook page using counters if necessary to make groups for each addend and counting the total for the sum.

On a blank piece of paper have students write a problem for each of the workbook problems that would demonstrate the commutative property of addition.

Review the term commutative property (numbers can be added in any order in an addition problem.)

Timed Test				
$\begin{array}{r} 0 \\ +2 \\ \hline 2 \end{array}$	$\begin{array}{r} 0 \\ +5 \\ \hline 5 \end{array}$	$\begin{array}{r} 0 \\ +1 \\ \hline 1 \end{array}$	$\begin{array}{r} 0 \\ +8 \\ \hline 8 \end{array}$	$\begin{array}{r} 0 \\ +3 \\ \hline 3 \end{array}$
$\begin{array}{r} 0 \\ +0 \\ \hline 0 \end{array}$	$\begin{array}{r} 0 \\ +4 \\ \hline 4 \end{array}$	$\begin{array}{r} 0 \\ +9 \\ \hline 9 \end{array}$	$\begin{array}{r} 0 \\ +6 \\ \hline 6 \end{array}$	$\begin{array}{r} 0 \\ +7 \\ \hline 7 \end{array}$

Workbook Answers							
							
Write the number the teacher says.							
a	25	b	41	c	18	d	47
e	12	f	8	g	50	h	32
Solve the addition problems. Use counters to help find the sums.							
$\begin{array}{r} 4 \\ +5 \\ \hline 9 \end{array}$	$\begin{array}{r} 7 \\ +0 \\ \hline 7 \end{array}$	$\begin{array}{r} 3 \\ +1 \\ \hline 4 \end{array}$	$\begin{array}{r} 1 \\ +6 \\ \hline 7 \end{array}$	$\begin{array}{r} 2 \\ +8 \\ \hline 10 \end{array}$			

## Lesson 71

### Objectives

1. Students will count from 301 to 400.
2. Students will explore geometric relationships using a geoboard.
3. Students will write numbers.
4. Students will measure lines in centimeters.
5. Students will solve addition problems.

### Materials

301 to 400 Number Chart  
 Geoboards and rubber bands  
 Workbook  
 Ruler (centimeters)  
 Rods and cubes

301	302	303	304	305	306	307	308	309	310
311	312	313	314	315	316	317	318	319	320
321	322	323	324	325	326	327	328	329	330
331	332	333	334	335	336	337	338	339	340
341	342	343	344	345	346	347	348	349	350
351	352	353	354	355	356	357	358	359	360
361	362	363	364	365	366	367	368	369	370
371	372	373	374	375	376	377	378	379	380
381	382	383	384	385	386	387	388	389	390
391	392	393	394	395	396	397	398	399	400

301-400 Number Grid

### Teaching

1. Have the children count from 301 to 400 using the number chart. Afterward, point to various numbers and ask students to identify them.
2. Have the children try to make as many of the letters of the alphabet as they can on the geoboards using the rubber bands.
3. The students will trace the numbers on the top of the workbook page.
4. **Measure the green, red, and purple lines on the workbook page. Today we'll measure in centimeters.** Help students identify the centimeter scale on the ruler if it has both inches and centimeters. **The centimeter side of the ruler has the numbers closer together. Put a centimeter cube up next to the ruler. How wide is it? (one centimeter)**

**Each colored line has different parts. Measure each part. Write the measurements on the writing lines.**

Students may measure the lines using the ruler and/or centimeter cubes. You may have students measure with the ruler and check the measurement by placing cubes along the line segments.

5. Students will find the sums of the addition problems. Students may use rods and cubes.

Next, review adding 3 numbers. Use cubes. Ask students to make 3 groups of cubes. **Write a problem for adding the groups. Use the letter f for the unknown answer. Tell me two ways you can solve the problem.** Repeat with other groups of three with sums up to 20.

**Workbook Answers**

357 358 359 360 361

Measure the lines in centimeters. Write the lengths.

Find the sums. Add tens and ones.

$\begin{array}{r} 52 \\ + 23 \\ \hline 75 \end{array}$	$\begin{array}{r} 33 \\ + 44 \\ \hline 77 \end{array}$	$\begin{array}{r} 75 \\ + 10 \\ \hline 85 \end{array}$	$\begin{array}{r} 12 \\ + 66 \\ \hline 78 \end{array}$	$\begin{array}{r} 91 \\ + 8 \\ \hline 99 \end{array}$
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Objectives

1. Students will use auditory skills to solve addition problems.
2. Students will write numbers.
3. Students will explore geometric shapes.

Materials

Geoboards and rubber bands  
 Workbook

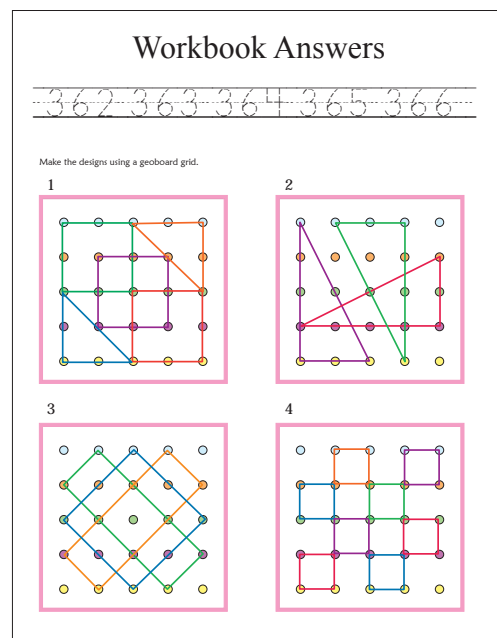
Teaching

1. The students will solve addition problems using listening skills. Tell the students that the answers will be 10, 11, 12, or 13.

**a 9..4, b 7..3, c 5..6, d 8..5, e 3..9, f 6..7, g 5..5, h 6..6, i 2..9, j 4..6**

2. The students will trace the numbers on the top of the workbook page.
3. Ask the students to see how many different shapes they can make touching 4 pegs. Have them use a different rubber band for each shape and leave the bands on the geoboard to keep track of the shapes. Repeat for shapes touching other numbers of pegs.

Next, have students make the designs on the workbook page.



## Lesson 73

### Objectives

1. Students will take a timed test (=14).
2. Students will construct a geometric design.
3. Students will write numbers.
4. Students will find missing addends.
5. Students will find the sums of two-digit addition problems.

### Materials

=14 timed test  
Dot paper (4 squares)  
Geoboards and rubber bands  
Workbook  
Count

### Teaching

1. Give the students the timed test. Students should circle only the problems that =14. The students should cross out all the problems that do not equal 14.
2. Have the students draw designs on the four sets of dots on the dot paper. The children should then make the figures on the geoboard. Exchange dot papers with other students or one that you have made.
3. The students will trace the numbers on the top of the workbook page.
4. Students will find missing numbers in equations. **Look at the first addition problem on the workbook page.  $9 + \text{some number} = 8 + 8$ . A blue rhombus is in place of the missing number. What number does the missing rhombus equal?**

**To find the answer start by look at the side of the problem that has two numbers. Make a group of counters showing that problem. Make two groups of eight counters. Next, move a counter from the first group so that the other group has nine counters. How many counters are left in the first group? (7) Seven is the number that the rhombus equals. Write seven on the lines.** Check to see the students record the answer on the lines on the right side of the page.

Students can solve the rest of the problems the same way.

5. Students will find the sums of the two-digit addition problems using rods and cubes.

Timed Test Answers

<del><math>\begin{array}{r} 8 \\ + 7 \\ \hline \end{array}</math></del>	$\begin{array}{r} 9 \\ + 5 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ + 6 \\ \hline \end{array}$	<del><math>\begin{array}{r} 0 \\ + 4 \\ \hline \end{array}</math></del>	$\begin{array}{r} 7 \\ + 7 \\ \hline \end{array}$
$\begin{array}{r} 6 \\ + 8 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ + 7 \\ \hline \end{array}$	<del><math>\begin{array}{r} 5 \\ + 8 \\ \hline \end{array}</math></del>	$\begin{array}{r} 5 \\ + 9 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ + 7 \\ \hline \end{array}$

Dot Paper

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Workbook Answers

367 368 369 370 371

Write the number that takes the place of each shape.

$9 + \color{blue}{\diamond} = 8 + 8$	$\color{blue}{\diamond} = 7$
$5 + 5 = 4 + \color{yellow}{\circ}$	$\color{yellow}{\circ} = 6$
$10 + 5 = \color{green}{\square} + 6$	$\color{green}{\square} = 9$
$9 + 10 = \color{pink}{\star} + 11$	$\color{pink}{\star} = 8$
$\color{red}{\triangle} + 12 = 4 + 13$	$\color{red}{\triangle} = 5$

Find the sums. Add tens and ones.

$\begin{array}{r} 28 \\ + 41 \\ \hline 69 \end{array}$	$\begin{array}{r} 34 \\ + 13 \\ \hline 47 \end{array}$	$\begin{array}{r} 52 \\ + 32 \\ \hline 84 \end{array}$	$\begin{array}{r} 65 \\ + 31 \\ \hline 96 \end{array}$	$\begin{array}{r} 16 \\ + 22 \\ \hline 38 \end{array}$
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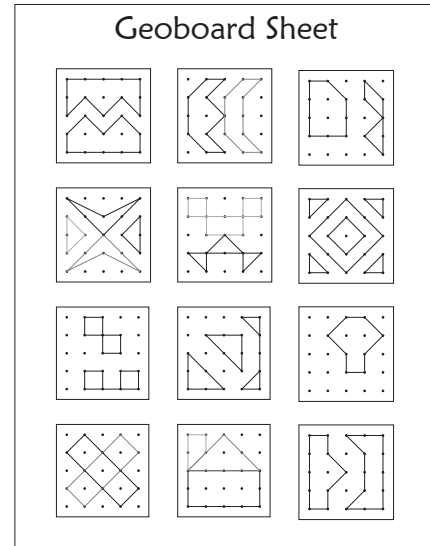
## Lesson 74

### Objectives

1. Students will make geometric shapes.
2. Students will write numbers.
3. Students will count quarters.
4. Students will read clock faces.

### Materials

Geoboard sheet (copy master)  
 Geoboards and rubber bands  
 Workbook  
 Coins  
 Clock Faces



### Teaching

1. Have the children make the designs on the twelve geoboard sheet. If two or more rubber bands overlap, one (or more) rubber band is presented as a gray line.
2. The students will trace the numbers on the top of the workbook page.
3. Show students quarters. **These are quarters. Quarters are worth 25 cents each. Make a group of coins that equal twenty five cents. Choose from dimes, nickels, and pennies.** Students can choose any combination such as two dimes and a nickel, five nickels, or twenty-five pennies.

**Keep that group together and make another group of coins worth 25 cents.** Students can choose any combination a second time. **Now, put the two groups together and count the value. How much are two groups of 25 cents worth? (25 cent) So how much are two quarters worth? (50 cents)**

**Keep the group worth 50 cents together. Let's make one more group of coins worth 25 cents to count how much three quarters are worth.** After students make the third group, have students count the total value of the 50 cent group and 25 cent group.

On the workbook page students will make groups of pennies, dimes, and nickels worth 25 cents, 50 cents, and 75 cents and record how many of each coin was used (not the value of each kind of coin).

4. Have students practice setting times to the hour and half-hour on the clock faces. Next, students will write the time of the clock faces shown on the workbook page.

### Workbook Answers

3/2 3/3 3/4 3/5 3/6

How many of the different kinds of coins equal the quarters.

25¢ = = + +

50¢ = = + +

75¢ = = + +

Read the clock faces. Write the times.

8:30    3:30    9:00    2:00

Objectives

1. Students will take a timed test (=14).
2. Students will write numbers.
3. Students will read a graph.
4. Students will solve addition problems.

Materials

=14 timed test  
Workbook

Teaching

1. Give the students the timed test. Students should circle only the problems that =14.
2. The students will trace the numbers on the top of the workbook page.
3. **Look at the graph on the workbook page. McRuffy’s Pet Store sells several colors of fish. The graph shows how many of each color were sold in one week. Six colors of fish are on the graph.**

**What color of fish sold the most?** (green)

**What color sold the least?** (purple)

**What two colors had the same numbers sold?** (red and orange)

**How many yellow fish were sold?** (4)

**How many blue fish were sold?** (6)

**Did Ruff sell more blue fish or more orange fish?** (blue)

**Add the purple and yellow fish. Did Ruff sell more red fish or more purple and yellow fish?** (purple and yellow)

**Add the green and blue fish together. What is the total number of green and blue fish sold?** (13)

4. Students will sold the addition problems using rods and cubes.

Timed Test Answers

<del><math>\begin{array}{r} 8 \\ + 7 \\ \hline \end{array}</math></del>	$\begin{array}{r} 9 \\ + 5 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ + 6 \\ \hline \end{array}$	<del><math>\begin{array}{r} 0 \\ + 4 \\ \hline \end{array}</math></del>	$\begin{array}{r} 7 \\ + 7 \\ \hline \end{array}$
$\begin{array}{r} 6 \\ + 8 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ + 7 \\ \hline \end{array}$	<del><math>\begin{array}{r} 5 \\ + 8 \\ \hline \end{array}</math></del>	$\begin{array}{r} 5 \\ + 9 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ + 7 \\ \hline \end{array}$

Workbook Answers

377 378 379 380 381

Use the graph to answer the teacher's questions.

Color	Number Sold
Green	7
Red	4
Blue	6
Purple	3
Yellow	4
Orange	4

Find the sums. Add tens and ones.

$\begin{array}{r} 44 \\ + 32 \\ \hline 76 \end{array}$	$\begin{array}{r} 51 \\ + 18 \\ \hline 69 \end{array}$	$\begin{array}{r} 25 \\ + 42 \\ \hline 67 \end{array}$	$\begin{array}{r} 64 \\ + 4 \\ \hline 68 \end{array}$	$\begin{array}{r} 35 \\ + 50 \\ \hline 85 \end{array}$
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# Lesson 156

## Objectives

1. Students will use auditory skills.
2. Students will write numbers.
3. Students will add two-digit numbers with regrouping.
4. Students will estimate temperatures.

## Materials

Paper  
Rods and cubes  
Workbook

## Teaching

1. Have the children label their papers from a to o. On lines a through e the students will write the number that comes between the two given numbers. On lines f through j the students will write the greatest of the two numbers. The last five will be rounding to the nearest 10.

**On lines a through e write the number that comes between the two given numbers. If I said 63..65 what number would you write? (64)**

a 45..47, b 276..278, c 4..6, d 449..451, e 345..347,

**On lines f through j the write the least of the two numbers. If I said 32..41 what number would you write? (32)**

f 212..222, g 61..16, h 434..343, i 102..201, j 67..76

**On lines k to o, round the number to the nearest 10, If I said 82 what number would you write? (80) If I said 87 what number would you write? (90)**

k 54, L 94, m 76, n 33, o 68

2. Students will trace the numbers on the top of the workbook page.
3. Review two-digit addition. Do the first problem on the workbook page together using rods and cubes. **Let's look at the first addition problem.  $54 + 18$ . What is the first step in solving the problem? (Add the ones place,  $4 + 8$ )**

**What will you do next?** (regroup the ones into a ten and two one)

**What is the next step?** (carry the one to the tens column) **What is the last step?** (add the tens column,  $1 + 5 + 1$  and write the sum of the tens.) **What is the sum?** (72)



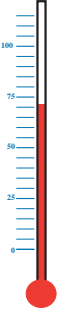
**Workbook Answers**

||||| 8 ||| 9 | 80 | 8 |

Regroup to solve the problems.

$\begin{array}{r} 54 \\ + 18 \\ \hline 72 \end{array}$	$\begin{array}{r} 72 \\ + 19 \\ \hline 91 \end{array}$
$\begin{array}{r} 29 \\ + 44 \\ \hline 73 \end{array}$	$\begin{array}{r} 35 \\ + 35 \\ \hline 70 \end{array}$
$\begin{array}{r} 77 \\ + 15 \\ \hline 92 \end{array}$	$\begin{array}{r} 46 \\ + 24 \\ \hline 70 \end{array}$

Read the thermometers. Each line is 2°. Estimate the temperatures to the closest line. Fill in the oval to show the nearest temperature.

		
<input type="radio"/> 45°	<input type="radio"/> 90°	<input type="radio"/> 65°
<input type="radio"/> 50°	<input type="radio"/> 95°	<input type="radio"/> 70°
<input type="radio"/> 55°	<input type="radio"/> 100°	<input type="radio"/> 75°

Objectives

1. Students will take a timed test.
2. Students will make patterns.
3. Students will write numbers.
4. Students will estimate times.
5. Students will subtract three-digit numbers.

Materials

- + - 6 timed test
- Workbook
- Animal counters, pattern blocks, cubes, and/or counting chips
- Clock faces
- Rods, cubes, and flats

Teaching

1. Give the students the timed test. Remind them to watch the signs.
2. Describe a pattern using letters such as ABBC and have the children make the patterns using various kinds of manipulative. For example, students can make the pattern using pattern blocks, and then make the same pattern using 1" cubes.
3. Students will trace the numbers on the top of the workbook page.
4. Set a clock face to various time, not on the hour or half-hour. Students will estimate the times to the nearest hour or half-hour.

On the workbook page, students will circle the time that is closest to the time shown on the clock face. Students may use the pink and blue circle diagram on the workbook page to help estimate the times.

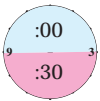
5. Students will solve the subtraction problems. Students may use the rods, cubes, and flats cards.

Timed Test Answers				
$\begin{array}{r} 7 \\ - 6 \\ \hline 1 \end{array}$	$\begin{array}{r} 9 \\ - 6 \\ \hline 3 \end{array}$	$\begin{array}{r} 3 \\ + 6 \\ \hline 9 \end{array}$	$\begin{array}{r} 5 \\ + 6 \\ \hline 11 \end{array}$	$\begin{array}{r} 8 \\ - 6 \\ \hline 2 \end{array}$
$\begin{array}{r} 4 \\ + 6 \\ \hline 10 \end{array}$	$\begin{array}{r} 6 \\ - 6 \\ \hline 0 \end{array}$	$\begin{array}{r} 2 \\ + 6 \\ \hline 8 \end{array}$	$\begin{array}{r} 7 \\ - 6 \\ \hline 1 \end{array}$	$\begin{array}{r} 1 \\ + 6 \\ \hline 7 \end{array}$


**Workbook Answers**

182 183 184 185 186

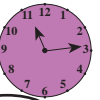
Circle the time that is closest to the time on the clock.




7:00 7:30




5:30 6:00



11:00 11:30



9:30 10:00



4:00 4:30

Subtract to solve the problems.

$\begin{array}{r} 749 \\ - 345 \\ \hline 404 \end{array}$	$\begin{array}{r} 876 \\ - 875 \\ \hline 1 \end{array}$	$\begin{array}{r} 592 \\ - 481 \\ \hline 111 \end{array}$	$\begin{array}{r} 288 \\ - 144 \\ \hline 144 \end{array}$	$\begin{array}{r} 675 \\ - 425 \\ \hline 250 \end{array}$
---	---	---	---	---

# Lesson 158

## Objectives

1. Students will use auditory skills.
2. Students will write numbers.
3. Students will recognize halves (more or less than half)
4. Students will add three-digit numbers (no regrouping)

## Materials

Paper  
Workbook  
Rods, cubes, and flats

## Teaching

1. Have the children label their papers from a to j.

**The first five problems will be addition problems. Add the two numbers I say.**

**a 7..6, b 5..3, c 9..0, d 6..6, e 8..2,**

**The next five problems will be subtraction problems. Subtract the second number from the first.**

**f 7..6, g 5..3, h 9..0, i 6..6, j 8..2,**

**Count backward two numbers on letters k to o. For example, if I say five what will you write? (3)**

**k 9, L 4, m 7, n 63, o 155**

2. Students will trace the numbers on the top of the workbook page.

3. **Look at the groups of shapes in the boxes. Are more than half of the shapes circles or less? Circle your answer in each box.**

**Next, look at the four shapes. Is more or less than half of the each shape colored?**

4. Students will solve the problems. Students may use the rods, cubes, and flats cards.

**Workbook Answers**

787 788 789 790 791

Circle more if more than half of the shapes in each box are circles. Circle less if less than half of the shapes are circles.

● more  
○ less

● more  
○ less

● more  
○ less

Is more or less than half of each shape colored? Mark your answer below the shape.

● more  
○ less

● more  
○ less

● more  
○ less

● more  
○ less

Add to solve the problems.

$\begin{array}{r} 382 \\ + 611 \\ \hline 993 \end{array}$	$\begin{array}{r} 178 \\ + 700 \\ \hline 878 \end{array}$	$\begin{array}{r} 462 \\ + 315 \\ \hline 777 \end{array}$	$\begin{array}{r} 208 \\ + 531 \\ \hline 739 \end{array}$	$\begin{array}{r} 842 \\ + 26 \\ \hline 868 \end{array}$
---	---	---	---	--

178

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First Grade Color Math

Teacher's Manual Sample

Objectives

1. Students will take a timed test (+, - 6).
2. Students will write numbers.
3. Students will make tangram designs.
4. Students will find product of multiplication problems.

Materials

+ - 6 Timed Test  
 Workbook  
 Coins

Teaching


1. Give the students the timed test.
2. Students will trace the numbers on the top of the workbook page.
3. Have students make groups of coins and count them. Students will count the groups of coins on the workbook page.
4. Students will find the products. Students can use the number line on the page to help find the products.

Timed Test Answers				
$\begin{array}{r} 7 \\ - 6 \\ \hline 1 \end{array}$	$\begin{array}{r} 9 \\ - 6 \\ \hline 3 \end{array}$	$\begin{array}{r} 3 \\ + 6 \\ \hline 9 \end{array}$	$\begin{array}{r} 5 \\ + 6 \\ \hline 11 \end{array}$	$\begin{array}{r} 8 \\ - 6 \\ \hline 2 \end{array}$
$\begin{array}{r} 4 \\ + 6 \\ \hline 10 \end{array}$	$\begin{array}{r} 6 \\ - 6 \\ \hline 0 \end{array}$	$\begin{array}{r} 2 \\ + 6 \\ \hline 8 \end{array}$	$\begin{array}{r} 7 \\ - 6 \\ \hline 1 \end{array}$	$\begin{array}{r} 1 \\ + 6 \\ \hline 7 \end{array}$


### Workbook Answers

792 793 794 795 796

Count the coins. Write the totals on the lines.



**95₹**



**86₹**

Solve the multiplication problems. Write the sums.

$\begin{array}{r} 6 \\ \times 2 \\ \hline 12 \end{array}$	$\begin{array}{r} 2 \\ \times 9 \\ \hline 18 \end{array}$	$\begin{array}{r} 7 \\ \times 2 \\ \hline 14 \end{array}$	$\begin{array}{r} 2 \\ \times 1 \\ \hline 2 \end{array}$	$\begin{array}{r} 4 \\ \times 2 \\ \hline 8 \end{array}$
$\begin{array}{r} 2 \\ \times 3 \\ \hline 6 \end{array}$	$\begin{array}{r} 8 \\ \times 2 \\ \hline 16 \end{array}$	$\begin{array}{r} 2 \\ \times 2 \\ \hline 4 \end{array}$	$\begin{array}{r} 5 \\ \times 2 \\ \hline 10 \end{array}$	$\begin{array}{r} 2 \\ \times 0 \\ \hline 0 \end{array}$

## Lesson 160 Unit 4 Test

- A. **Draw a line to match each number word to its number.**
- B. **Read the clocks and circle the times that are closest to the times on the clock.**

C and D: **I will say a number. Write that number in the box on the lines.**

**D. 438 E. 500**

E and F: **Look at the number 49 in the box. Write the number that comes before 49 on the left and the number that comes after 49 on the right.** (Repeat for number 125).

- G. **Circle the shapes that are half shaded.**
- H. **Color half the boxes.**
- I. **Count by 100's. Write the numbers on the lines. Start with 200.**

J through N: **I will say a number as hundreds, tens, and ones. Write the number.**

For example if I say 5 hundreds 6 tens and 3 ones you would write 563.

J..8 hundreds 4 tens and 2 ones K..7 hundreds 0 tens and 9 ones

L..3 hundreds 2 tens and 5 ones M..9 hundreds 9 tens and 0 ones

N..4 hundreds 8 tens and 7 ones

- O. **Round the numbers off to the nearest ten.**
- P. **Multiply by 2.**
- Q. **Solve the problems. Don't forget to regroup the ones on the last row.**

# Test Answers

Name \_\_\_\_\_

**A**

twenty	12
seven	11
twelve	17
eleven	7
seventeen	20

**B**

**C**

438
-----

**D**

500
-----

**E**

48	49	50
----	----	----

**F**

124	125	126
-----	-----	-----

**G**

**I**

<b>100</b>	200	300
400	500	600
700	800	900

**H**  
shade any 3 parts

**J**

842
-----

**K**

709
-----

**L**

325
-----

**M**

990
-----

**N**

487
-----

End of Year Test  
Page 1

# Test Answers

**O**

<b>57</b>	<b>60</b>	<b>19</b>	<b>20</b>	<b>73</b>	<b>70</b>
-----------	-----------	-----------	-----------	-----------	-----------

**P**

**Q**

$\begin{array}{r} 784 \\ - 622 \\ \hline 162 \end{array}$	$\begin{array}{r} 999 \\ - 834 \\ \hline 165 \end{array}$	$\begin{array}{r} 476 \\ - 215 \\ \hline 261 \end{array}$	$\begin{array}{r} 573 \\ - 321 \\ \hline 252 \end{array}$	$\begin{array}{r} 684 \\ - 174 \\ \hline 510 \end{array}$
---	---	---	---	---

$\begin{array}{r} 373 \\ + 404 \\ \hline 777 \end{array}$	$\begin{array}{r} 901 \\ + 98 \\ \hline 999 \end{array}$	$\begin{array}{r} 261 \\ + 215 \\ \hline 476 \end{array}$	$\begin{array}{r} 573 \\ + 321 \\ \hline 894 \end{array}$	$\begin{array}{r} 750 \\ + 138 \\ \hline 888 \end{array}$
---	--	---	---	---

Regroup

$\begin{array}{r} 59 \\ + 33 \\ \hline 92 \end{array}$	$\begin{array}{r} 17 \\ + 17 \\ \hline 34 \end{array}$	$\begin{array}{r} 44 \\ + 39 \\ \hline 83 \end{array}$	$\begin{array}{r} 29 \\ + 58 \\ \hline 87 \end{array}$	$\begin{array}{r} 11 \\ + 79 \\ \hline 90 \end{array}$
--	--	--	--	--

End of Year Test  
Page 2



# First Grade

## Color Math

### Workbook Samples

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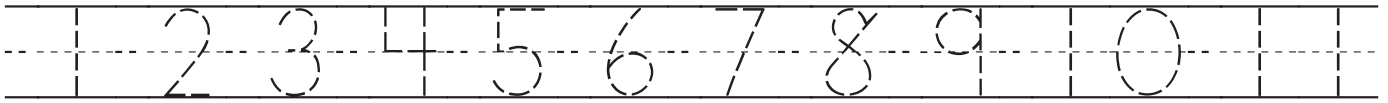
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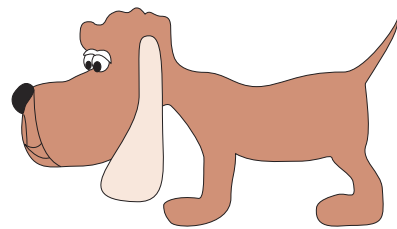
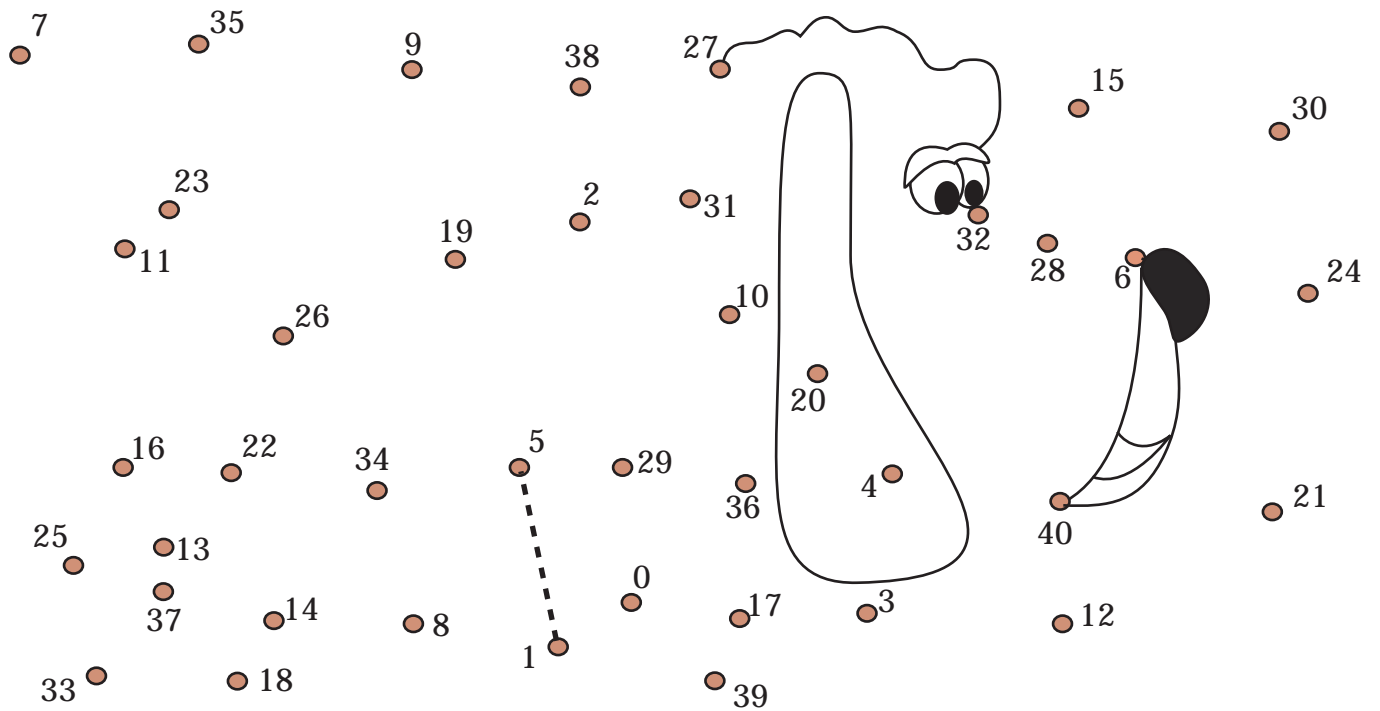
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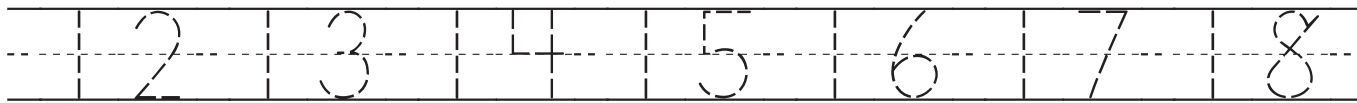




Beside each dot is a number. The teacher will say two numbers. Draw a line to connect the dots. Not all of the dots will be connected.



# Lesson 2

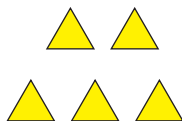
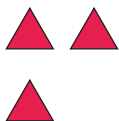


Write a number sentence for each group.

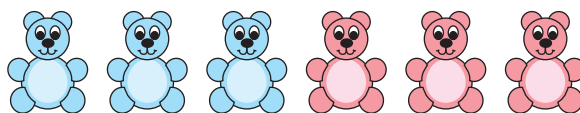


Example:

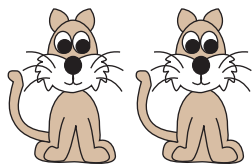
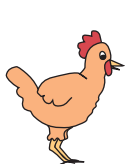
$$\underline{6} + \underline{3} = \underline{9}$$



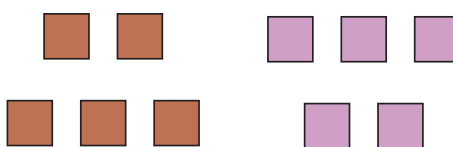
$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$



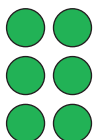
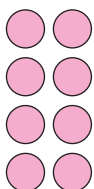
$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$



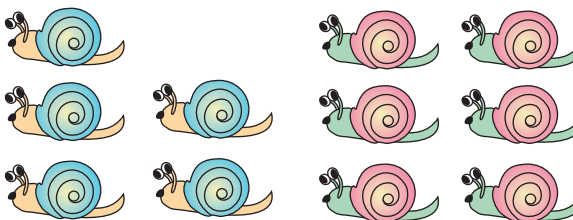
$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$



$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$



$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$



$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$



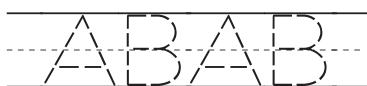
Solve the addition problems. Use counters to help find the sums.

$0$	$0$	$0$	$0$	$0$
$+2$	$+4$	$+7$	$+5$	$+9$
_____	_____	_____	_____	_____
-----	-----	-----	-----	-----
_____	_____	_____	_____	_____

Label the patterns.



Example:



\_\_\_\_\_

-----

\_\_\_\_\_

\_\_\_\_\_

-----

\_\_\_\_\_

\_\_\_\_\_

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\_\_\_\_\_

\_\_\_\_\_

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\_\_\_\_\_

\_\_\_\_\_

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\_\_\_\_\_

\_\_\_\_\_

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\_\_\_\_\_

# Lesson 4

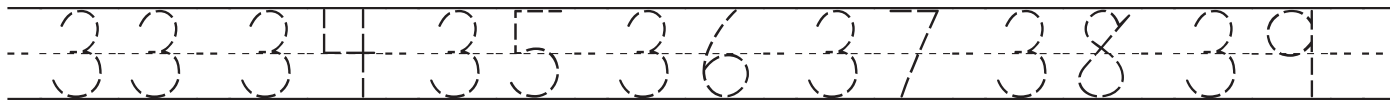
26 27 28 29 30 31 32

Draw counters five times. Count the number in each draw and write the totals in the boxes.

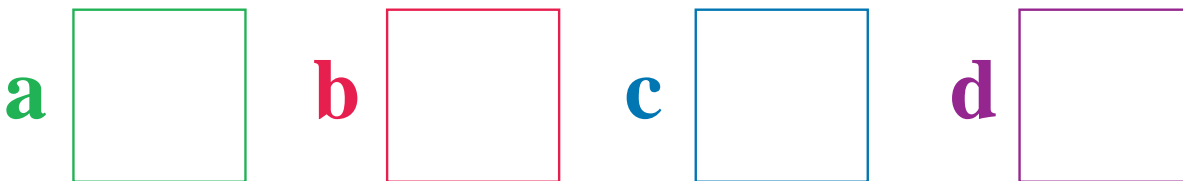
1	2	3	4	5

Solve the addition problems. Use counters to help find the sums.

2	3	6	9	4
+5	+3	+2	+1	+1
_____	_____	_____	_____	_____
-----	-----	-----	-----	-----
_____	_____	_____	_____	_____



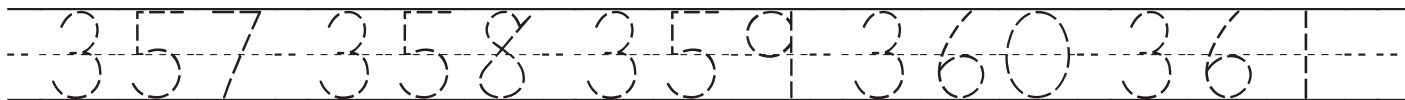
Write the number the teacher says.



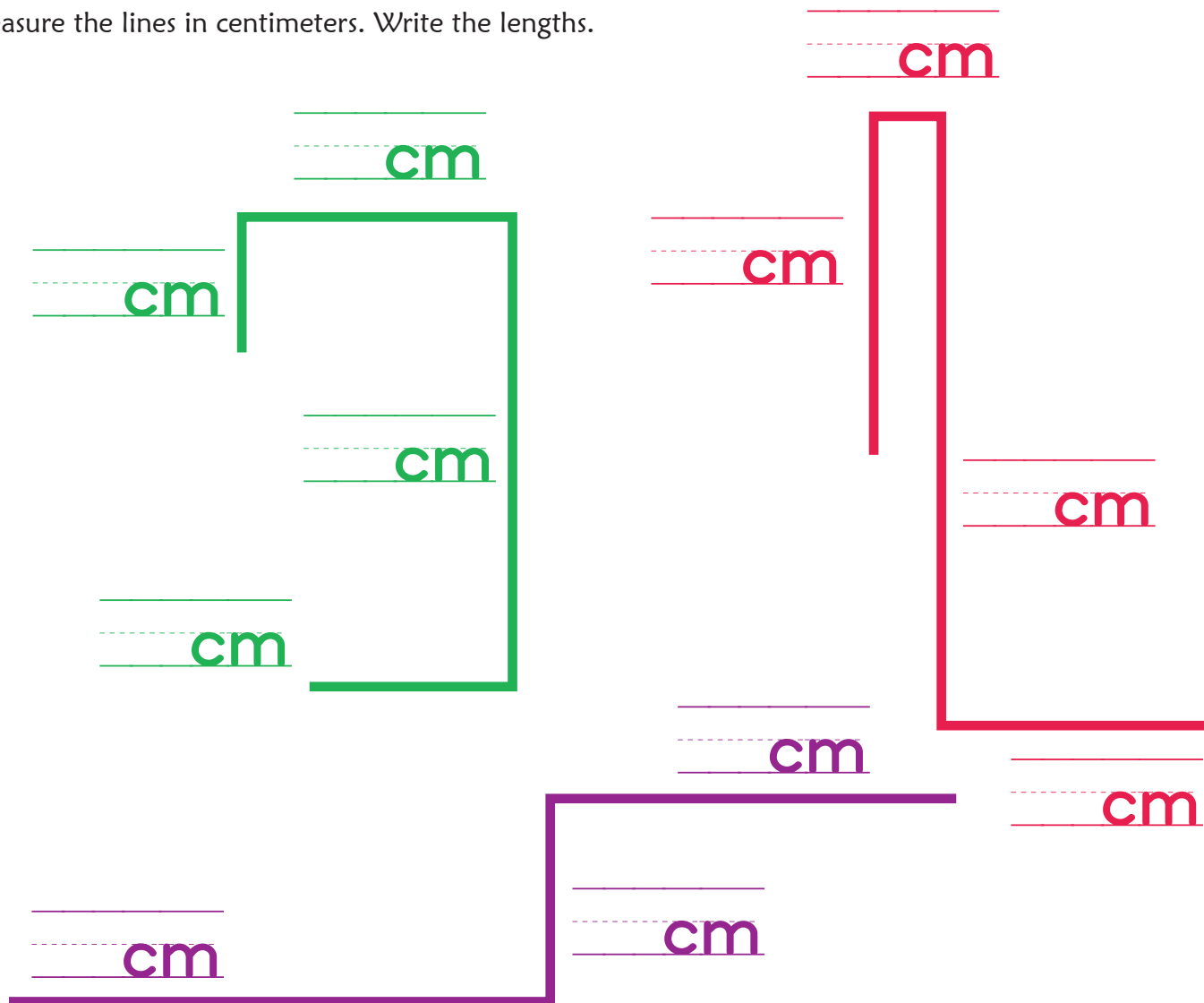
Solve the addition problems. Use counters to help find the sums.

4	7	3	1	2
+5	+0	+1	+6	+8
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Lesson 71



Measure the lines in centimeters. Write the lengths.



Find the sums. Add tens and ones.

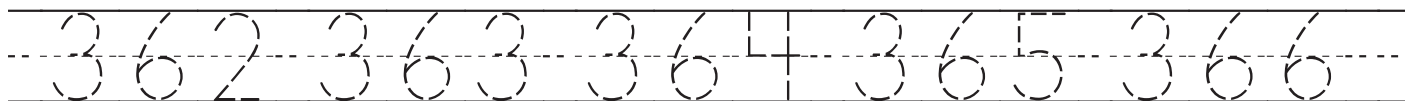
$$\begin{array}{r} 52 \\ + 23 \\ \hline \end{array}$$

$$\begin{array}{r} 33 \\ + 44 \\ \hline \end{array}$$

$$\begin{array}{r} 75 \\ + 10 \\ \hline \end{array}$$

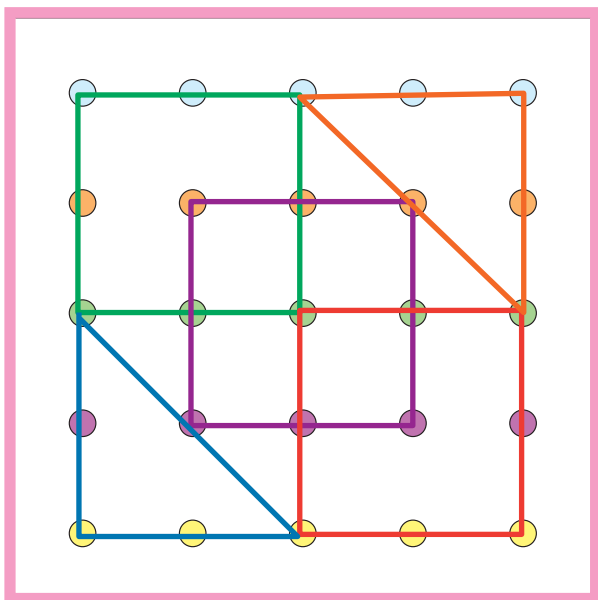
$$\begin{array}{r} 12 \\ + 66 \\ \hline \end{array}$$

$$\begin{array}{r} 91 \\ + 8 \\ \hline \end{array}$$

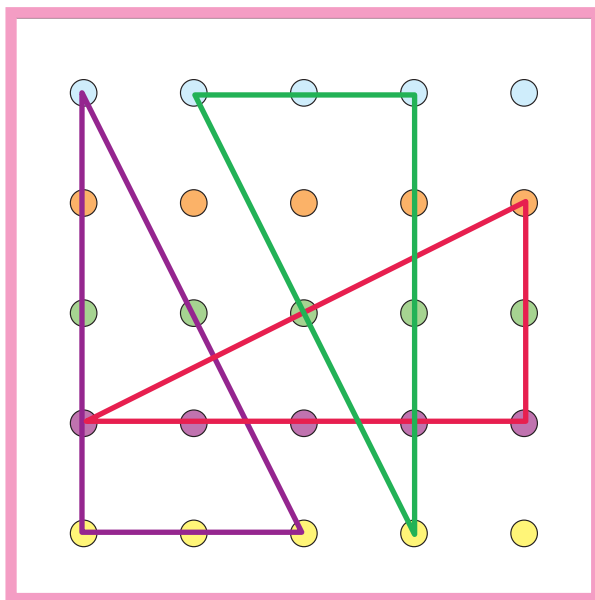


Make the designs using a geoboard grid.

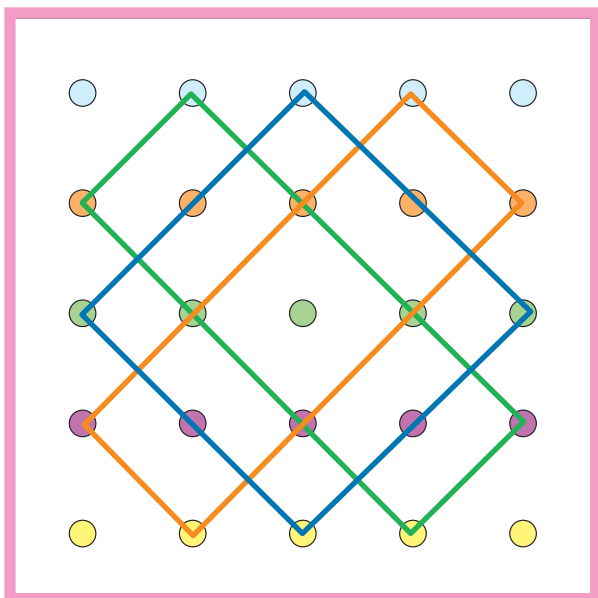
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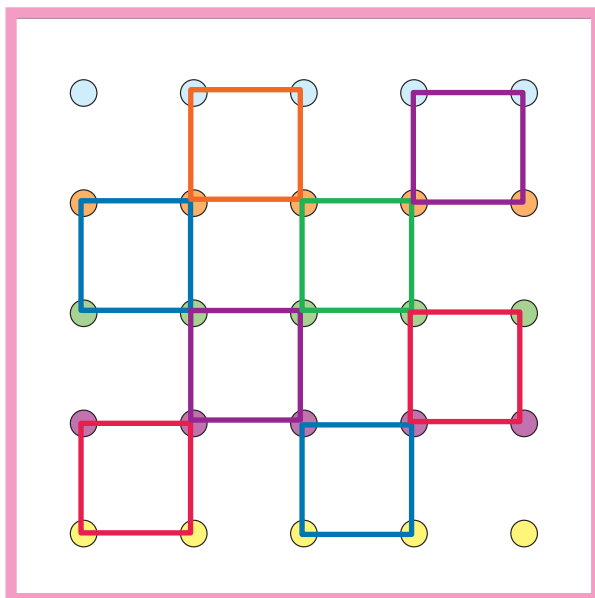
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3

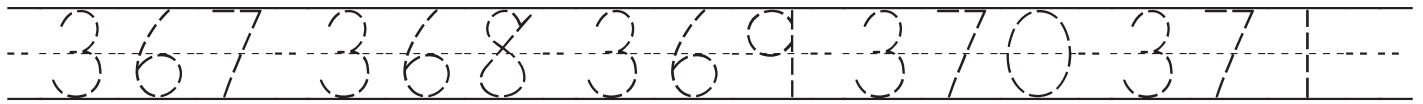


4





Lesson 73



Write the number that takes the place of each shape.

$$9 + \text{diamond} = 8 + 8$$

$$\text{diamond} = \underline{\hspace{1cm}}$$

$$5 + 5 = 4 + \text{oval}$$

$$\text{oval} = \underline{\hspace{1cm}}$$

$$10 + 5 = \text{rectangle} + 6$$

$$\text{rectangle} = \underline{\hspace{1cm}}$$

$$9 + 10 = \text{star} + 11$$

$$\text{star} = \underline{\hspace{1cm}}$$

$$\text{triangle} + 12 = 4 + 13$$

$$\text{triangle} = \underline{\hspace{1cm}}$$

Find the sums. Add tens and ones.

$$\begin{array}{r} 28 \\ + 41 \\ \hline \end{array}$$

$$\begin{array}{r} 34 \\ + 13 \\ \hline \end{array}$$





$$\begin{array}{r} 52 \\ + 32 \\ \hline \end{array}$$

$$\begin{array}{r} 65 \\ + 31 \\ \hline \end{array}$$

$$\begin{array}{r} 16 \\ + 22 \\ \hline \end{array}$$

372 373 374 375 376





How many of the different kinds of coins equal the quarters.

25¢  =  +  + 

\_\_\_\_\_

\_\_\_\_\_





\_\_\_\_\_

50¢  =  +  + 

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

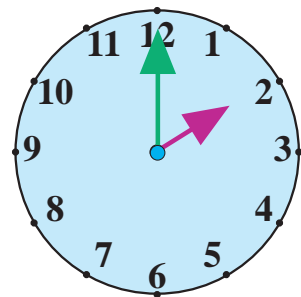
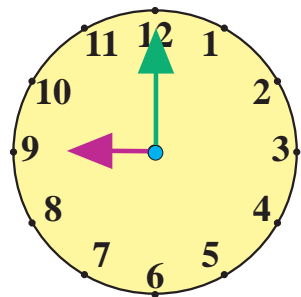
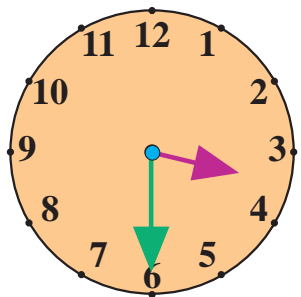
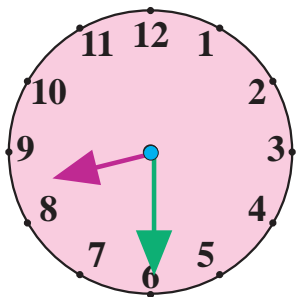
75¢  =  +  + 

\_\_\_\_\_

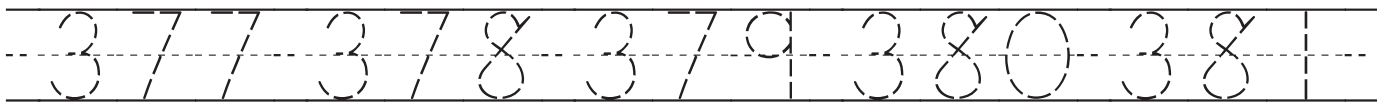
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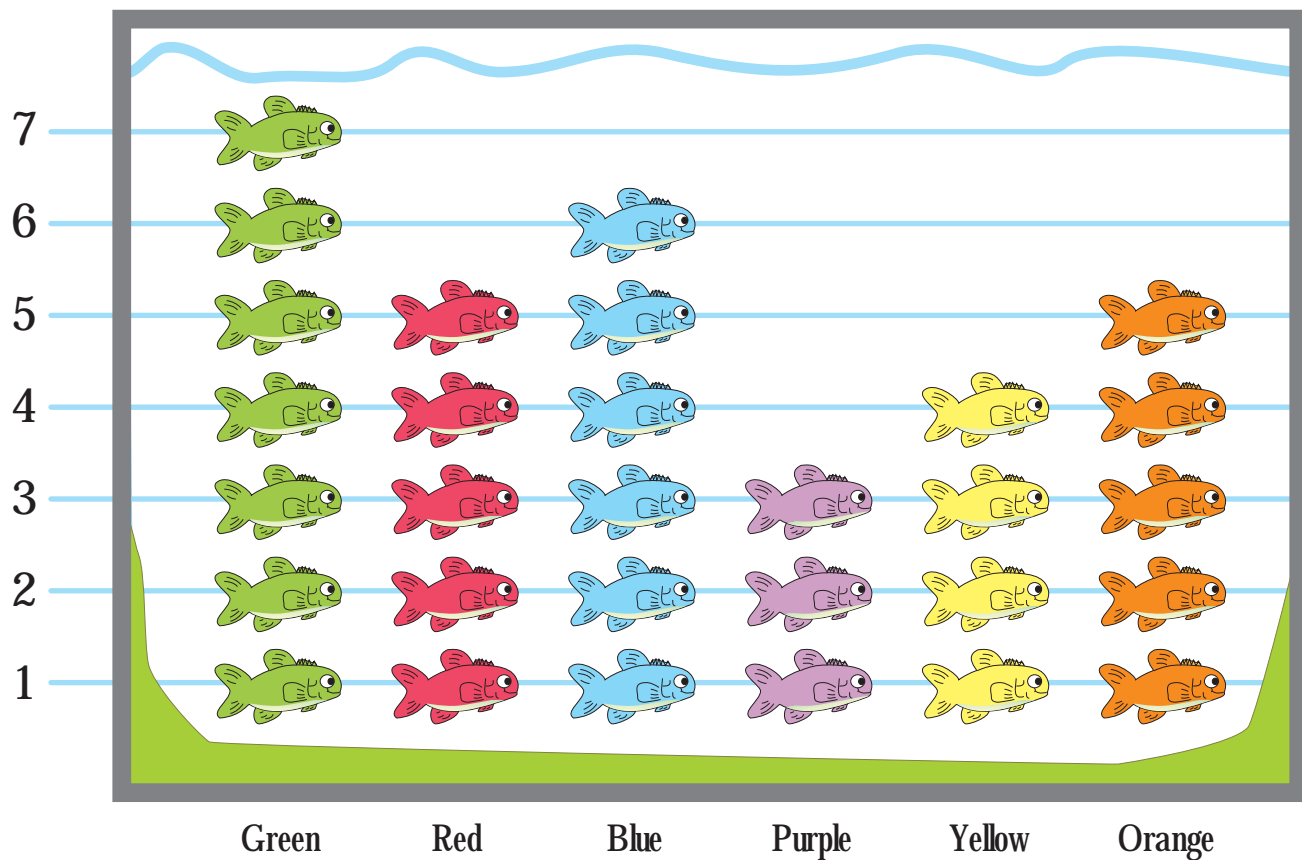
Read the clock faces. Write the times.



Lesson 75



Use the graph to answer the teacher's questions.



Find the sums. Add tens and ones.

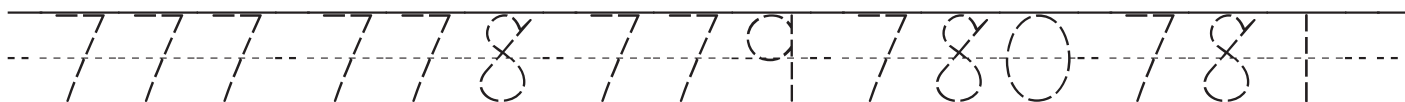
$$\begin{array}{r} 44 \\ + 32 \\ \hline \end{array}$$

$$\begin{array}{r} 51 \\ + 18 \\ \hline \end{array}$$

$$\begin{array}{r} 25 \\ + 42 \\ \hline \end{array}$$

$$\begin{array}{r} 64 \\ + 4 \\ \hline \end{array}$$

$$\begin{array}{r} 35 \\ + 50 \\ \hline \end{array}$$



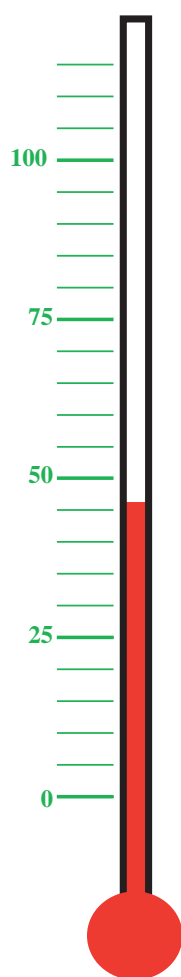
Regroup to solve the problems.

$$\begin{array}{r} 54 \\ + 18 \\ \hline \end{array} \quad \begin{array}{r} 72 \\ + 19 \\ \hline \end{array}$$

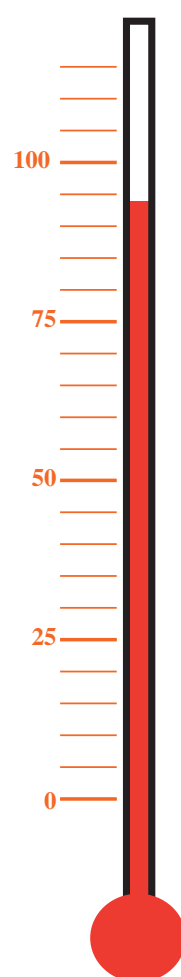
$$\begin{array}{r} 29 \\ + 44 \\ \hline \end{array} \quad \begin{array}{r} 35 \\ + 35 \\ \hline \end{array}$$

$$\begin{array}{r} 77 \\ + 15 \\ \hline \end{array} \quad \begin{array}{r} 46 \\ + 24 \\ \hline \end{array}$$

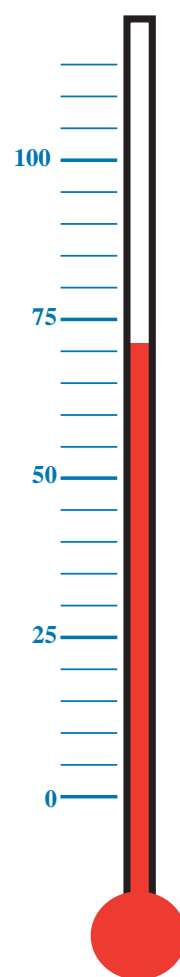
Read the thermometers. Each line is 5°. Estimate the temperatures to the closest line. Fill in the oval to show the nearest temperature.



- 45
- 50
- 55

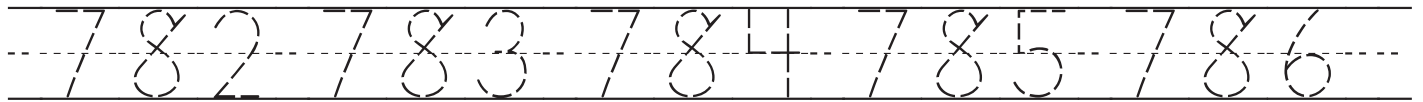


- 90
- 95
- 100

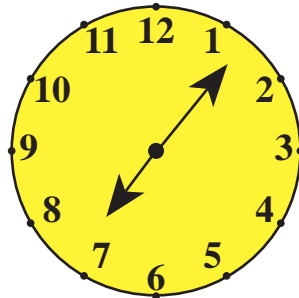
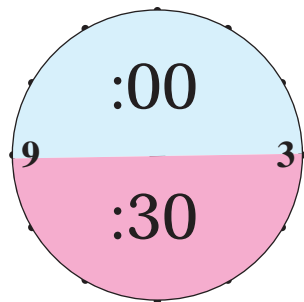


- 65
- 70
- 75

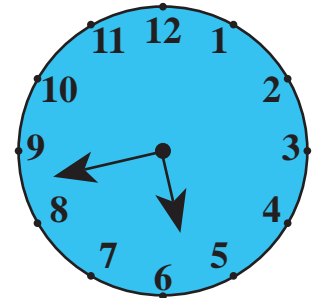
Lesson 157



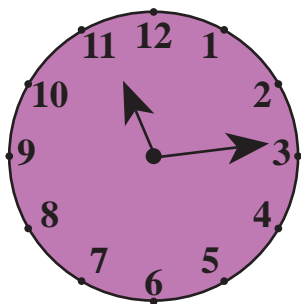
Circle the time that is closest to the time on the clock.



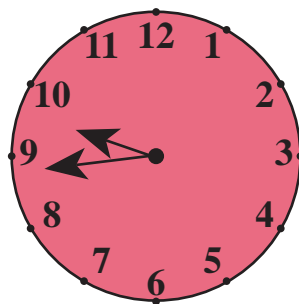
7:00    7:30



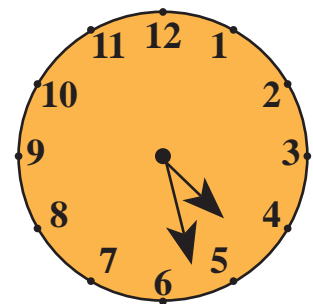
5:30    6:00



11:00    11:30



9:30    10:00



4:00    4:30

Subtract to solve the problems.

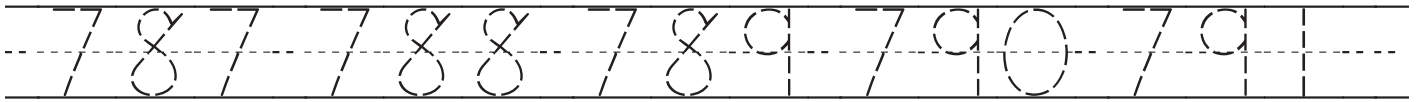
$$\begin{array}{r} 749 \\ - 345 \\ \hline \end{array}$$

$$\begin{array}{r} 876 \\ - 875 \\ \hline \end{array}$$

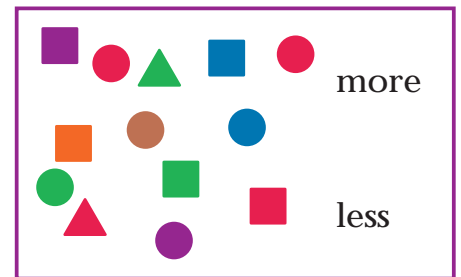
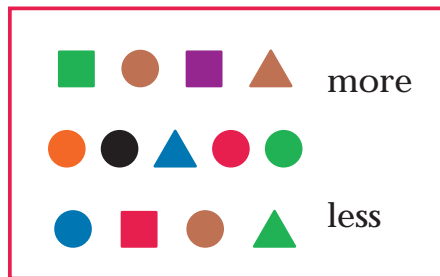
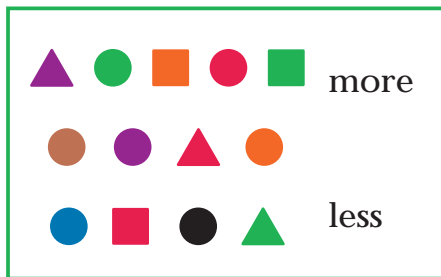
$$\begin{array}{r} 592 \\ - 481 \\ \hline \end{array}$$

$$\begin{array}{r} 288 \\ - 144 \\ \hline \end{array}$$

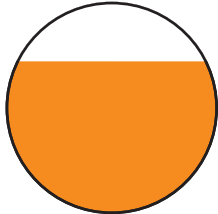
$$\begin{array}{r} 675 \\ - 425 \\ \hline \end{array}$$



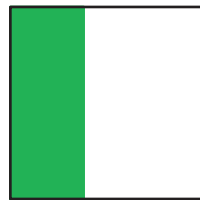
Circle more if more than half of the shapes in each box are circles. Circle less if less than half of the shapes are circles.



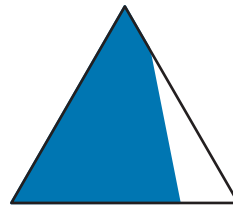
Is more or less than half of each shape colored? Mark your answer below the shape.



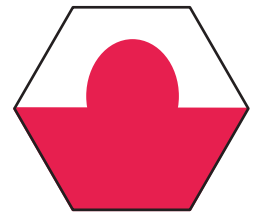
more  
 less



more  
 less



more  
 less



more  
 less

Add to solve the problems.

$$\begin{array}{r} 382 \\ + 611 \\ \hline \end{array}$$

$$\begin{array}{r} 178 \\ + 700 \\ \hline \end{array}$$

$$\begin{array}{r} 462 \\ + 315 \\ \hline \end{array}$$

$$\begin{array}{r} 208 \\ + 531 \\ \hline \end{array}$$

$$\begin{array}{r} 842 \\ + 26 \\ \hline \end{array}$$

# Lesson 159



Count the coins. Write the totals on the lines.

Solve the multiplication problems. Write the sums.



$$\begin{array}{r} 6 \\ \times 2 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \\ \times 9 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ \times 2 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \\ \times 1 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ \times 2 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \\ \times 3 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ \times 2 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \\ \times 2 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \\ \times 2 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \\ \times 0 \\ \hline \end{array}$$