



Third Grade

Color Math

Teacher's Manual Samples

Teacher's Manual Part 1 ISBN 9781592693221

Teacher's Manual Part 2 ISBN 9781592693238

McRuffy Third Grade Color Math Curriculum ISBN 9781592692293

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McRuffy Third Grade Color Math

The Third Grade Color Math curriculum is arranged into 160 daily lessons. Each lesson plan states lesson objectives, materials, teaching directions, and answers. The objectives briefly state the concepts or exercises covered by the lesson. They are numbered. The numbers correspond to the teaching section. The materials section lists any special materials needed for the lesson. Basic materials such as pencils are not listed. Words typed in **bold** print can be stated directly to the students.

Although objectives are numbered, for the most part they do not have to be taught in that order. You may also decide to teach one objective during one part of the day and teach another later in the day. Sometimes an objective is simply restated in the teaching section if it is self-explanatory, such as having children write numbers or solve problems. This is not meant to be redundant, just consistent with the format.

Each lesson contains several objectives. This allows for frequent review, also called spiraling of concept. This keeps the skill level of the students up. The workbook pages reflect this approach. Lessons include a workbook page and an auditory response exercise to build both math and listening skills.

The teacher's manual consists of the lesson plans and workbook answers. Unit tests and timed tests are in the Resource Packet. Permission to copy timed tests and unit tests is granted for personal or classroom use (not for resale). Workbook pages are not reproducible. Copies are available from McRuffy Press.

The curriculum consists of a teacher's manual, a workbook, a response book, and a resource packet. The response book can be replaced with the reproducible response form or even a piece of paper with lines labeled with the letters A to J and a pencil. The response book would still be used to check answers, either by the student or the teacher. The response book is designed to be self-checking for the convenience of the teacher and to teach the student responsibility for checking their work. Using the dry erase markers to write answers may also be motivating for students.

Manipulatives are available as a separate kit from McRuffy Press. If you purchased the kindergarten or first grade manipulatives, you may purchase just the additional items needed. The kit is the same as the 2nd grade level. McRuffy Press also sells all manipulatives 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). The lessons column states when the manipulative is used.

Manipulatives

Quantity	Manipulative
250	Transparent Chips: These are used as counters and sometimes referred to as counters or circle counters. They provide a greater variety of colors and a greater quantity of counters.
50	Base Ten Cubes (base ten) are one centimeter cubed. They can be used for measuring as well as base ten activities.
50	Pattern Blocks
20	Base Ten Rods (base ten) represent 10 cubes
10	Base Ten Flat cards represent 100 cubes
1	Clock dial
2	Tangram Sets: Seven piece sets
1	Fraction Pieces Set
1	Geoboard and rubber bands
1	Pentomino twelve piece set.
2	Dice
12	One Inch Cubes
2	Small Petri dishes

Coins (not included in the manipulative kit)

Resource Pack

The resource pack contains copy masters, tests, timed test, games, charts (posters), and mats. Although packaged separately, the math cards are also considered part of the resource pack.

Scope and Sequence

Lessons 1 to 21

Addition facts
Multiplication
Ten thousands place value
Commutative property
Subtraction facts
Even and odd
Two-digit addition
Three-digit addition
Groups as fractions
Skip counting 2, 5, 10, 100
Geometric designs
Number families
Circles as fractions
Multiplication facts
Counting coins
Patterns
Adding time to clocks
Two-digit subtraction
Story problems
Graph reading
Add three two-digit numbers
Test 1

Lessons 22 to 40

Multiplication facts
Subtract two-digit numbers
Add three-digit numbers
Recognize attributes
Add three two-digit numbers
Add time to clocks
Story problems
Inequalities
Math Machine (function table)
Coin counting
Fractions
Complete a table
Measuring centimeters
Cardinal points
Multiple operation problems
Place value
Patterns
Interpret graph
Subtraction facts
Geometric designs
3 Dimensional shape names
Estimating halves
Symmetry
Skip count 1000
Test 2

Lessons 41 to 62

Fractions
Reading clocks
Skip counting
Subtraction skills
Addition (multiple numbers)
Subtraction two three-digit
Centimeters
Thermometer
Inequalities
Coin counting
Calculator skills
Story problems
Roman numerals
Missing multipliers
Compare groups
Perimeter
Area
Multiplication
Math Machine
Place value
Geometric designs
Add & Subtract monetary amounts
Test 3

Lessons 63 to 82

Multiply by 10
Area & perimeter
Missing multipliers
Division terms
Division
Graphing
Roman numerals
Coin counting
Subtraction fact review
Add & subtract fractions
Subtract time
Identify shapes
Geometric designs
Multiple operation problems
Inequalities
Story problems
Collect data
Add & subtract monetary amounts
Attributes
Coordinates (letter, number)
Test 4

Scope and Sequence

Lessons 83 to 102

Division
Clock reading
Math Machine
Coin counting
Multiplication
Number Patterns
Inches and Centimeters
Story problems
Addition
Attributes
Multiple operations
Inequalities
Geometric designs
Add & Subtract fractions
Rounding to 100
Coordinates
Create a graph
Estimate addition and subtractions
Thermometers
Division with remainders
Roman numerals
Calendar
Test 5

Lessons 103 to 123

Division
Coin counting
Math Machines
Coordinates
Geometric designs
Graphing
Story problems
Inequalities
Choosing measuring device
Add & subtract monetary amounts
Regroup minutes as hours and minutes
Recognize sequences in designs
Write coordinates
Make rules for number groups
Multiply 3-digit numbers by 1-digit
Compare fractions
Complete a table
Associative property
Estimate times
Find missing signs
Fractions on a ruler
Write story problems
Multiplying 2 two-digit numbers
Test 6

Lessons 124 to 141

Add & subtract five-digits
Decimals tenths
Time
Multiply two-two-digit numbers
Match patterns
Round to 100
Math Machine
Inequalities
Add and subtract time
Multiply four-digit numbers by one-digit
Thermometers
Coordinates (number, number)
Multiple operations
Venn diagrams
Story problems
Graphs
Geometric designs
Compare fractions
Division
Make change
Add & subtract decimals
Time to minute
Missing signs
Match patterns
Roman numerals
Symmetry
Test 7

Lessons 142 to 161

Add & subtract multiple numbers
Roman numerals
Convert units
Compare fractions
Round dollars
Estimate time
Symmetry
Story problems
Making change from up to \$100
Compare degrees C and F
Multiplication
Division
Graphing
Division with bracket
Decimals hundredths
Geometric designs
Attributes
Place value to millions
Test 8

Response Book

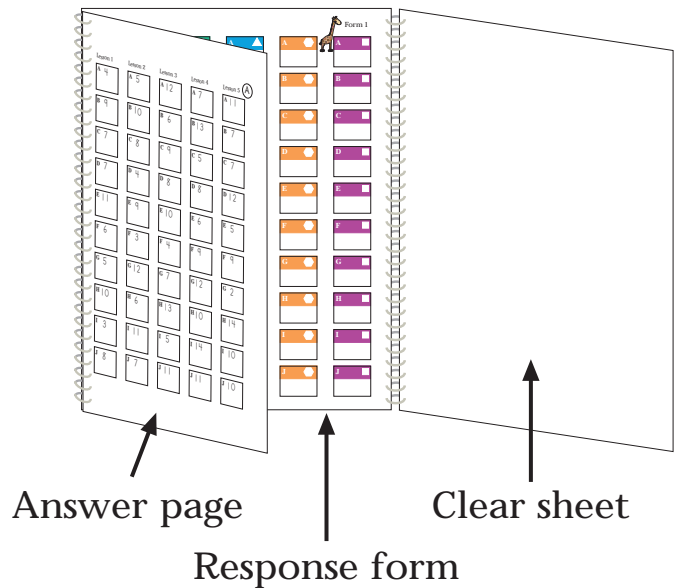
Most lessons feature an opportunity for students to listen and respond. These are short exercises that review concepts. Examples include simply calculation, recognizing place value of a given digit, writing times or dollar amounts, recognizing numbers as odd or even. Responses can be recorded in the Response Book. By using a dry erase marker to write on the clear plastic flip sheet, students can record their answers, then flip the clear sheet to an answer page and check their answers. This also makes the response book a non-consumable item. If you prefer a paper copy to use with a pencil, there is a copy master response form.

Directions for exercises recorded in the Response Book are stated in the lessons. These are usually easier exercises. The emphasis is on listening and responding. Teachers may allow or even encourage students to use the appropriate manipulatives to help visualize and solve the problems. Students may also jot down notes on scrap paper if necessary to help respond.

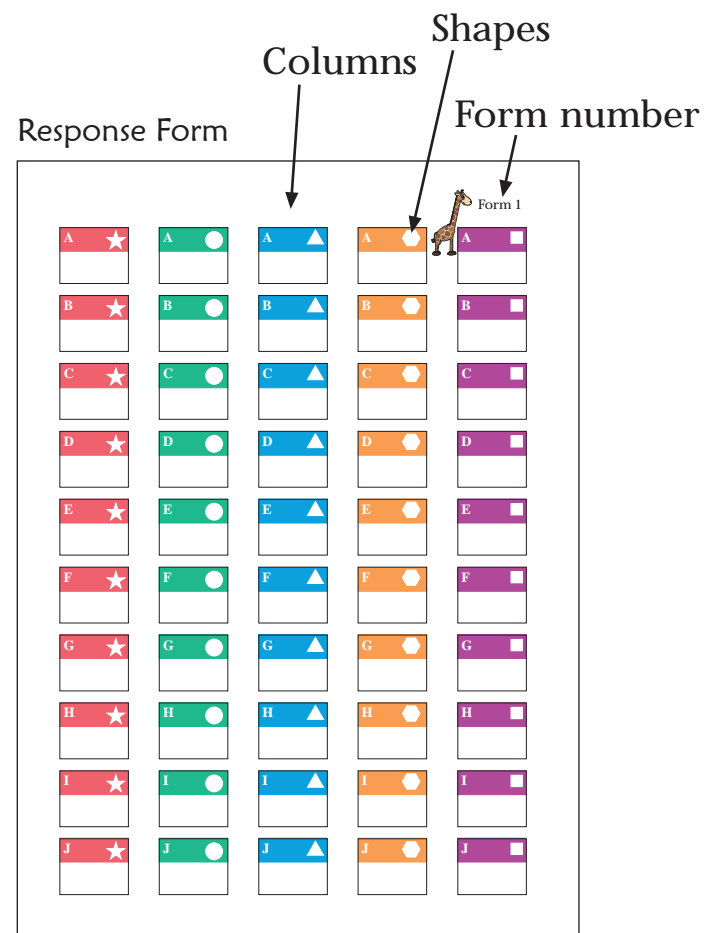
Most exercises contain ten responses that are recorded in a column of boxes. Some more difficult or time consuming activities may only feature five responses. If students are having difficulty with an exercise, or it is taking too much time for a review activity, you may choose to end the exercise before asking for all ten responses. Responses within an exercise are random in difficulty. There is no planned progression from easiest to hardest.

To make the self-checking feature work properly, two import directions must be followed. The correct form must be used and the correct column must be used. Form 2 is a flipped version of Form 1, otherwise they are identical. Since answers are printed two-sided, the correct form must be used to match the answers. Form 1 also features a small picture of a giraffe. Form 2 features a small picture of a zebra. The pictures were added to make the forms more distinctive. An answer page is designated by a letter in the lesson directions. The same answer sheet is used for 5 lessons (a few lesson have no exercises).

Columns are designated by shapes in the upper right-hand corner of each response box. Each lesson will use a designated column. The order of shapes are star, circle, triangle, hexagon, square. At the beginning of the Response exercise, the correct form and correct column will be noted.



1. Flip the clear sheet onto the response form.
2. Students record answers onto the face of the clear sheet. The response form helps students to align and record their responses in the correct area for checking.
3. Find the correct answer page. Flip the clear sheet onto the page and match the answers.



Lesson 26

Objectives

1. Students will subtract two three-digit numbers.
2. Students will recognize halves, thirds, and fourth.
3. Students will construct a design and complete a chart.
4. Students will review multiplication facts.

Materials

Fraction pieces
Pattern blocks

Teaching

1. Workbook 26 part 1: Students will solve the problems.
2. Review $\frac{1}{2}$ using fraction pieces. Remind the student that the number $\frac{1}{2}$ means one part of something divided into two equal pieces. Compare the two halves to the whole. Next show the child the thirds. Have the child compare the three pieces to the whole.

Ask: How many of these pieces does it take to equal the whole? We can say that each piece is one part of the whole divided into three equal pieces. We used the word half when talking about two pieces. When we talk about three pieces we use the word third. Each piece is one third.

Repeat using fourths. Show the child the fourths. Have the child compare the four pieces to the whole. **We can say that each piece is one part of the whole divided into four equal pieces. We used the word half when talking about two pieces. When we talk about four pieces we use the word fourth. Each piece is one fourth.**

Workbook part 2: The students will write fractions to describe the shaded part of each object.

Workbook part 3: The students will color the portion of each object described by the fraction.

3. Student will build the pattern block design at the bottom of the page several different ways using different numbers of pieces. The chart shows the number of each piece used to make it with eight pieces. Next, build it with nine pieces and record the number of each piece on the chart. The easiest way to do this is to find a piece that can be exchanged for two smaller pieces. Repeat with 10, 12, and 14 pieces.
4. Students will review multiplication with the auditory exercise.

Auditory Exercise Multiplication: Use form 2, the column with stars. I will say multiplication problems. Write the products in the boxes.

A. 3×4 , B. 5×2 , C. 4×3 , D. 6×2 , E. 7×3 , F. 2×3 , G. 4×1 , H. 7×0 , I. 1×4 , J. 5×0

Check your answer on page F.

Subtraction Review: Solve the problems.

$\begin{array}{r} 987 \\ - 854 \\ \hline \end{array}$	$\begin{array}{r} 642 \\ - 199 \\ \hline \end{array}$	$\begin{array}{r} 796 \\ - 428 \\ \hline \end{array}$	$\begin{array}{r} 853 \\ - 698 \\ \hline \end{array}$	$\begin{array}{r} 582 \\ - 284 \\ \hline \end{array}$
---	---	---	---	---

Write a fraction for the color part of each shape.

Color part of each shape to match the fraction.

Complete the chart. Build the shape with the number of pieces shown in the chart. Record the number of each piece used.

Build it using:	2	2	2	2
8 pieces				
9 pieces				
10 pieces				
12 pieces				
14 pieces				

Workbook Answers

Subtraction Review: Solve the problems.

$$\begin{array}{r} 987 \\ - 854 \\ \hline 133 \end{array}$$

$$\begin{array}{r} 642 \\ - 199 \\ \hline 443 \end{array}$$

$$\begin{array}{r} 796 \\ - 428 \\ \hline 368 \end{array}$$

$$\begin{array}{r} 853 \\ - 698 \\ \hline 155 \end{array}$$

$$\begin{array}{r} 582 \\ - 284 \\ \hline 298 \end{array}$$

Write a fraction for the color part of each shape.



$$\frac{2}{3}$$



$$\frac{1}{2}$$



$$\frac{1}{4}$$



$$\frac{2}{4}$$



$$\frac{1}{2}$$



$$\frac{1}{3}$$

Color part of each shape to match the fraction.



$$\frac{1}{4}$$



$$\frac{2}{3}$$



$$\frac{1}{2}$$



$$\frac{3}{4}$$



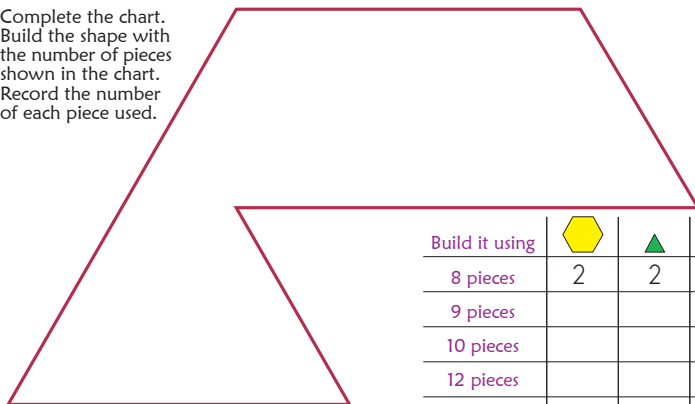
$$\frac{1}{3}$$







$$\frac{2}{2}$$

exact parts shaded can vary

Complete the chart.
Build the shape with
the number of pieces
shown in the chart.
Record the number
of each piece used.



Build it using				
8 pieces	2	2	2	2
9 pieces				
10 pieces				
12 pieces				
14 pieces				

answers vary

Lesson 27

Objectives

1. Students will subtract two three-digit numbers.
2. Students will recognize fifths, sixths, eighths, etc.
3. Students will measure lines in centimeters.
4. Students will compare numbers.

Materials

Fraction pieces
Centimeter cubes, rods, or rulers

Teaching

1. Workbook 26 part 1: The students will solve the problems.
2. Review $\frac{1}{2}$, $\frac{1}{3}$, and $\frac{1}{4}$ using fraction pieces. Remind the student that the number $\frac{1}{2}$ means one part of something divided into two equal pieces. ($\frac{1}{3}$ is one part of something divided into three equal pieces. One fourth is divided into four equal pieces.) Compare the parts to the whole.

Sort out the fifths. Ask: **How many of these pieces does it take to equal the whole? We can say that each piece is one part of the whole divided into five equal pieces.**

We used the word half when talking about two pieces. When we talk about five pieces we use the word fifth. Each piece is one fifth.

Tell the student the names of all the other fractions are named after the number on the bottom part of the fraction with the letters added to the number. Examples: six and sixth, seven and seventh, etc.

Workbook part 2: The students will write fractions to describe the shaded part of each object.

3. Have students measure various object such as pencils, books, and scissors using centimeters. You may have students use rulers or rods and cubes, or both.

Workbook page part 3: **Measure the lines in centimeters that make up each shape. Write a number by each part of the shape and add them to find the total length. Write the total lengths of each shape on the lines.**

4. Auditory Exercise Greater than and Less than: Use form 2, the column with circles.

In this exercise I will say two numbers. Write a greater than or less than sign in the box on the recording form.

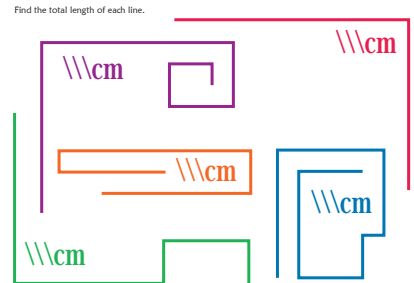
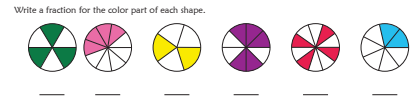
A. (165 128), B. (368 372), C. (501 105), D. (996 998), E. (714 740),

F. (256 248), G. (444 333), H. (810 796), I. (637 673), J. (873 865)

This is the end of the Greater and Less-Than exercise. Check your answer on page F.

Subtraction Review: Solve the problems.

$\begin{array}{r} 235 \\ - 146 \\ \hline \end{array}$	$\begin{array}{r} 457 \\ - 249 \\ \hline \end{array}$	$\begin{array}{r} 603 \\ - 372 \\ \hline \end{array}$	$\begin{array}{r} 542 \\ - 448 \\ \hline \end{array}$	$\begin{array}{r} 900 \\ - 749 \\ \hline \end{array}$
---	---	---	---	---



Workbook Answers

Subtraction Review: Solve the problems.

$$\begin{array}{r} 235 \\ - 146 \\ \hline 89 \end{array}$$

$$\begin{array}{r} 457 \\ - 249 \\ \hline 208 \end{array}$$

$$\begin{array}{r} 603 \\ - 372 \\ \hline 231 \end{array}$$

$$\begin{array}{r} 542 \\ - 448 \\ \hline 94 \end{array}$$

$$\begin{array}{r} 900 \\ - 749 \\ \hline 151 \end{array}$$

Write a fraction for the color part of each shape.



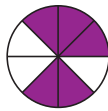
$$\frac{3}{6}$$



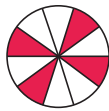
$$\frac{4}{9}$$



$$\frac{2}{5}$$



$$\frac{5}{8}$$

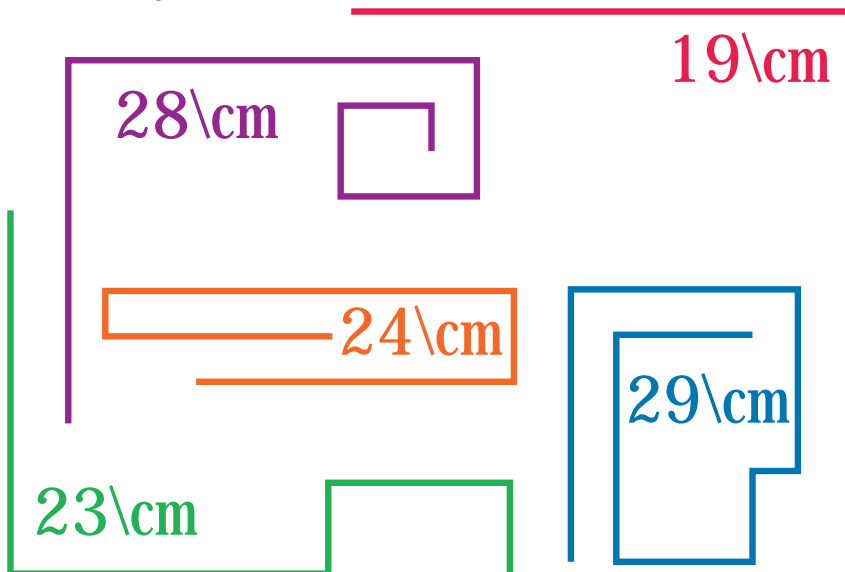


$$\frac{4}{10}$$



$$\frac{2}{7}$$

Find the total length of each line.



Lesson 28

Objectives

1. Students will subtract two three-digit numbers.
2. Students will recognize fractions.
3. Students will count coins.
4. Students will use cardinal points.

Materials

- Counters
- Fraction pieces
- Coins
- Map or globe (optional)

Teaching

1. Workbook 26 part 1: The students will solve the problems.
2. Review different fractions. Have students show fractions using fraction pieces, then make a group of counters that demonstrate the same fraction. For example $\frac{2}{5}$ would us two of the fifths fraction pieces. Make a group of five counters with two being one color and others being other colors.

Workbook part 2: The students will color circles to match the fractions.

3. Write $79¢$. **Make a group of coins worth $79¢$. How many of each coin did you use? Find another way to make $79¢$. What coins did you use? Find a third way to make $79¢$. What coins did you use?**

On the workbook page are three boxes. Make groups of coins equal to the amounts on the page. Record how many of each coin was used. Make three groups for each coin total. You can use up to 10 pennies in each group.

Auditory Exercise Coin Counting: Use form 2, the column with triangles.

In this exercise I will describe a group of coins. You may use coins to make the same group. Write the total value of the coins in the box. You do not need to write the cent sign.

- A. 2 pennies, 3 dimes, B. 4 nickels, 7 pennies C. 2 quarters, 1 dime, 1 nickel,**
D. 1 quarter, 2 dimes, 1 nickel, 5 pennies, E. 3 quarters, 2 dimes, 2 nickels, 6 pennies

This is the end of the Coin Counting exercise. Check your answer on page F.

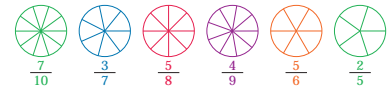
4. Introduce cardinal points to students: north, south, east, west, northwest, northeast, southwest, southeast. **These are points on a map. We use them to tell directions.**

You may label parts of a room with the cardinal points. You may also use a map or globe and find points using cardinal directions. For example, Canada is north of the United States. Florida is in the southeast corner of the United States.

Subtraction Review: Solve the problems.

$\begin{array}{r} 505 \\ - 197 \\ \hline \end{array}$	$\begin{array}{r} 773 \\ - 482 \\ \hline \end{array}$	$\begin{array}{r} 926 \\ - 895 \\ \hline \end{array}$	$\begin{array}{r} 381 \\ - 295 \\ \hline \end{array}$	$\begin{array}{r} 640 \\ - 319 \\ \hline \end{array}$
---	---	---	---	---

Color part of each shape to match the fraction.



Find 3 different ways you can make each amount. You can only use up to 10 pennies. Fill out the chart.

	pennies	nickels	dimes	quarters
98¢				
\$1.29				
\$2.04				

Workbook Answers

Subtraction Review: Solve the problems.

$$\begin{array}{r} 505 \\ - 197 \\ \hline 308 \end{array}$$

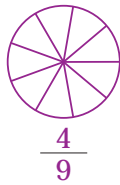
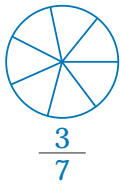
$$\begin{array}{r} 773 \\ - 482 \\ \hline 291 \end{array}$$

$$\begin{array}{r} 926 \\ - 895 \\ \hline 31 \end{array}$$

$$\begin{array}{r} 381 \\ - 295 \\ \hline 86 \end{array}$$

$$\begin{array}{r} 640 \\ - 319 \\ \hline 321 \end{array}$$

Color part of each shape to match the fraction.



Parts shaded
can vary

Find 3 different ways can you make each amount. You can only use up to 10 pennies.
Fill out the chart.



	pennies	nickels	dimes	quarters
98¢	3	2	1	3

Answers vary
A sample answer
is given for each group



	pennies	nickels	dimes	quarters
\$1.29	4	0	0	5



	pennies	nickels	dimes	quarters
\$2.04	4	3	1	7



Lesson 83

Objectives

1. Students will divide by four.
2. Students will read clock faces.
3. Students will complete a math machine.
4. Students will answer mass word problems.

Materials

- Counters
- Clock Faces
- Math Machine mat
- Dry erase marker
- Pennies, nickles, and paper clips

Teaching

1. Say: **Today you will begin to learn to divide by 4.**
What is the opposite of division? (multiplication)
 Review the 4 multiplication facts from 4×1 to 4×9 .
 Write them on paper or the chalkboard. Circle the products. Write the problem $24 \div 4 = \underline{\quad}$.
 Review the parts of the division problem (dividend, divisor, quotient).

Say: **The products from our multiplication problems will be the dividends of the division problems. The divisor will be 4. If we know that $4 \times 6 = 24$, What is the quotient of $24 \div 4$? (6) Remember when we divide 24 by 4, we are actually asking what number times three equals 24.**

Have students use counters to show a couple of division by 4 problems. For example, if the problem is $24 \div 4$, the students should make a group of 24 and then break it into four groups of six.

Have the students write the division facts of 4 for quotients equaling 1 to 9.

Workbook 83 part 1: Solve the problems.

2. Have students set clock dials to 1:30. The minute hand should be half-way between the 1 and the two. Have students show 1:35. Next say, **There are four minutes between 1:30 and 1:35: 1:31, 1:32, 1:33, and 1:34. How would you show them on the clocks?**

Have students practice setting the clock dials for various times to the minute, such as:

8:57, 12:02, 3:43 Make sure students estimate the position of the hour hand and minute hands.

Workbook 83 part 2: Draw hands on the clocks to match the times. Make sure the hour hand is shorter than the minute hand. You will estimate where the arrows point.

Auditory Exercise Time. **Use form 1, the column with hexagons.**

I will say a time. Write it in the box.

A. 8:37, B. 11:23, C. 2:47, D. 6:51, E. 7:12

Check your answer on page Q.

3. Start with part 3 of the workbook page. Students will complete the math machine tables on the page.

Next, use the Math Machine mat and marker. Have students make new functions and complete the tables.

Solve the problems.

$16 \div 4 = \underline{\quad}$ $8 \div 4 = \underline{\quad}$ $12 \div 4 = \underline{\quad}$
 $24 \div 4 = \underline{\quad}$ $20 \div 4 = \underline{\quad}$ $28 \div 4 = \underline{\quad}$

Draw hands on the clocks to show the times.

4:52 12:08 3:43 8:26

Complete the math machine tables. If both sides are empty, pick a number and apply the function.

$N \div 2$	$N \times 10$	$N - 11$	$(N \div 2) + 1$
6	2	33	4
10	40	44	8
7	7	66	12
			16

4. Students will answer word problems involving mass. Pennies and paper clips may help students model and think through the problems.

The mass of 2 pennies is five grams. What is the mass of 4 pennies? (10 grams)

A box of marbles had a mass of 36 grams. Each marble had a mass of 4 grams. How many marbles were in the box? (9)

Two paper clips had a total mass of 1 gram. The mass of 2 pennies is 5 grams. There were 6 paper clips and four pennies in a dish. What was the total mass of the pennies and paper clips? (13 grams)


If two paper clips were taken away, what would be the total mass? (12 grams)

A nickel has a mass of 5 grams. If you have 12 cents with no dimes, what is the greatest mass the group of coins could have? (12 pennies with a mass of 30 grams) **What is the least mass the group of coins can have?** (2 nickels and 2 pennies with a mass of 15 grams)

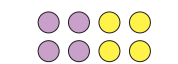
What would be the mass of 9 nickels? (45 grams)

Workbook Answers


Solve the problems.



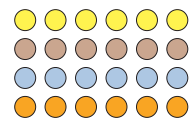
$$16 \div 4 = \underline{4}$$



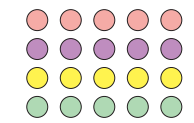
$$8 \div 4 = \underline{2}$$



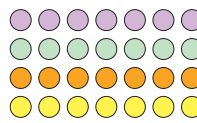
$$12 \div 4 = \underline{3}$$



$$24 \div 4 = \underline{6}$$

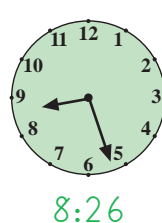
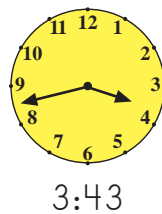
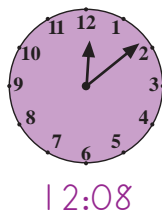


$$20 \div 4 = \underline{5}$$

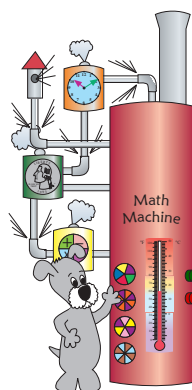


$$28 \div 4 = \underline{7}$$

Draw hands on the clocks to show the times.



Complete the math machine tables. If both sides are empty, pick a number and apply the function.



$N \div 2$	
6	3
10	5
14	7

$N \times 10$	
2	20
4	40
7	70

$N - 11$	
33	22
44	33
66	55

$(N \div 2) + 1$	
4	3
8	5
12	7
16	9

Answers on blank rows vary

Lesson 144

Objectives

1. Students will add and subtract areas.
2. Students will add numbers.
3. Students will round dollar amounts.
4. Students will estimate time to the quarter hour.

Materials

Clock faces
Geoboards and rubber bands
Tangrams

Teaching

1. Have the students construct a rectangle on the geoboard. Next, ask the students to make a second rectangle, keeping the first rectangle. Ask the students to find the area of each rectangle. Ask the students to add the areas. Have students write a problem to show the total, for example: $(2 \times 2) + (1 \times 4) = 8$. Most spaces between pegs are more than an inch. If you want to be precise, you could say the area is 8 square units.

Have students make two rectangles that overlap. Have students find the area of each rectangle. Next, have students subtract the overlapping part of each rectangle. Students can then write a subtraction problem to show the part that doesn't overlap. Repeat with other examples. Try for example making a smaller rectangle inside a larger rectangle.

Describe some triangles and have students find the area. **I will describe rectangles. Write their areas.**

- A. length = 7, width = 5, B. length = 8, width = 3, C. length = 10, width = 7,
D. length = 9, width = 2, E. length = 11, width = 4,**

2. Workbook part 1: **Solve the problems. Add three numbers and add numbers with five digits.**
3. **Round the dollar amounts to the nearest five dollars. Use the chart to help you decide how to round. Look at the ones place and the cents places to decide to round up or down.**

What would \$23.29 round to? (\$25.00) What would \$27.89 round to? (\$30.00) What would \$22.47 round to? (\$20.00)

Round the addends on the workbook page. Find the sums. Compare the sums of the original problems to the sums of the estimates. Which estimates overestimated? Which estimates underestimated?

4. Practice estimating times to the nearest quarter hour using clocks.

Workbook part 3: **Read the clocks and estimate the times to the nearest quarter hour. Write the estimates on the lines.**

Solve the problems.

285	517	729	642	858
374	526	488	831	263
+ 906	+ 586	+ 120	+ 333	+ 497

36857	73958	55204	27395
+ 85412	+ 93524	+ 63801	+ 47978

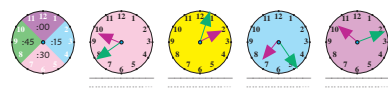
Round the addends up to the nearest \$5 and write a new addition problem. Find and compare the sums of the problems and the estimates.

0.01 to 2.99 round down
2.50 to 7.49 round to 5
7.50 to 9.99 round to 10

\$32.58	\$61.87
+ \$29.95	+ \$47.35

\$54.69	\$72.32
+ \$17.67	+ \$84.89

Estimate the times to the nearest quarter hour.



Auditory Exercise Estimating Time. Use form 1, the column with squares.

I will say times. Round the times to the nearest quarter hour. You may look at a clock face to help determine the estimate. Write the answers in the boxes.

A. 1:42, B. 3:55, C. 5:27, D. 6:39, E. 12:11,

F. 7:04, G. 10:18, H. 8:32, I. 2:50, J. 4:21

Use page CC to check your answers.

Workbook Answers

Solve the problems.

$$\begin{array}{r} 285 \\ 374 \\ + 906 \\ \hline 1565 \end{array} \quad \begin{array}{r} 517 \\ 526 \\ + 586 \\ \hline 1629 \end{array} \quad \begin{array}{r} 729 \\ 488 \\ + 120 \\ \hline 1337 \end{array} \quad \begin{array}{r} 642 \\ 831 \\ + 333 \\ \hline 1806 \end{array} \quad \begin{array}{r} 858 \\ 263 \\ + 497 \\ \hline 1618 \end{array}$$

$$\begin{array}{r} 36857 \\ + 85412 \\ \hline 122269 \end{array} \quad \begin{array}{r} 73958 \\ + 93524 \\ \hline 167482 \end{array} \quad \begin{array}{r} 55204 \\ + 63801 \\ \hline 119005 \end{array} \quad \begin{array}{r} 27395 \\ + 47978 \\ \hline 75373 \end{array}$$

Round the addends up to the nearest \$5 and write a new addition problem. Find and compare the sums of the problems and the estimates.

0.01 to 2.49 round down
2.50 to 7.49 round to 5
7.50 to 9.99 round to 10

$$\begin{array}{r} \$32.58 \\ + \$29.95 \\ \hline \$62.53 \end{array} \quad \begin{array}{r} \$35.00 \\ + \$30.00 \\ \hline \$65.00 \end{array} \quad \begin{array}{r} \$61.87 \\ + \$47.35 \\ \hline \$109.22 \end{array} \quad \begin{array}{r} \$60.00 \\ + \$50.00 \\ \hline \$110.00 \end{array}$$

$$\begin{array}{r} \$54.69 \\ + \$17.67 \\ \hline \$72.36 \end{array} \quad \begin{array}{r} \$55.00 \\ + \$20.00 \\ \hline \$75.00 \end{array} \quad \begin{array}{r} \$72.32 \\ + \$84.89 \\ \hline \$157.21 \end{array} \quad \begin{array}{r} \$70.00 \\ + \$85.00 \\ \hline \$155.00 \end{array}$$

Estimate the times to the nearest quarter hour.

