Fourth Grade

Color Math

Teacher's Manual Samples

Teacher's Manual Part 1 ISBN 9781592693245
Teacher's Manual Part 2 ISBN 9781592693252
McRuffy Fourth Grade Color Math Curriculum ISBN 9781592692484

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McRuffy Fourth Grade Color Math

The Fourth 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 (through lesson 150) to build both math and listening skills.

The teacher's manual consists of the lesson plans and workbook answers. Unit tests are in the Resource Packet. Permission to copy unit tests is granted for personal or classroom use (not for resale). The packet is set up to be consumable, so copies do not have to be made when used for a single child. 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 his or her work. Using dry erase markers to write answers may also be motivating for students.

Manipulatives are available as a separate kit from McRuffy Press. The only additional materials needed from the 2nd and 3rd kit is a pattern block mirror and 1 die. Materials from the 2nd and 3rd kit not used are the base ten material (cubes, rods, and flat cards). 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 fourth grade level begins with a thorough review of third grade materials as well as a few new concepts or expansion of ideas from previous levels. Major concepts in fourth grade include geometric terminology, areas of triangles, fractions concepts including addition and subtraction of fractions with different denominators, decimals, division, factoring, probability, geometric transformations, and much, much more.

The curriculum was designed around state standards from several states. Comparisions were made between requirements of various states and the curriculum strives to incorporate all the various requirements and frameworks for fourth grade math. In general, it will exceed state requirements.

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	Pattern Blocks
1	Clock dial
2	Tangram Sets: Seven piece sets
1	Fraction Pieces Set
1	Geoboard and rubber bands
1	Pentomino twelve piece set.
3	Dice
12	One Inch Cubes
1	Pattern Block Mirror (plastic safety mirror)

Coins (not included in the manipulative kit)

Calculator (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.

Games

Games are introduced periodically in specific lessons. The games reinforce specific skills. After a game is introduced it may be played at any time, even if a lesson doesn't call for it. The games are a great way to keep skills fresh and work toward mastery.

Scope and Sequence

Lessons 1 to 21 (Review emphasis)

Basic Facts (Add, Sub, Mult, Div)
Place value to millions
Patterns
Number words
Counting coins
Graphs
Shape names
Story problems
Reading clocks
Fraction review
Basic properties
Math machines
Symmetry
Geometric solids
Inequalities
Geometric designs
Rounding
Area and perimeter
Adding and subtracting decimals
Multi-digit addition
Test 1

Lessons 22 to 41

Area of irregular shapes
Patterns
Making change
Multi-digit subtraction
Range, median, and mode
Adding and subtracting time
Decimal and fraction equivalents
Missing number problems
Thermometer reading
Elapsed time calculation
Areas with diagonals
Story problems
Multiplying multi-digit numbers
Problems with parenthesis
Comparing fractions
Long division: single-digit divisor
Estimating time
Number words to millions
Adding and subtracting decimals
Geometric designs
Rounding
Predicting patterns
Test 2

Lessons 42 to 61

Area and perimeter formula for rectangles
Types of angles
Adding several numbers
Rounding
Parallel and perpendicular lines
Line segments and rays
Math machines
Story problems
Problems with unknowns
Venn diagrams
Fraction to decimal conversion
Attributes
Ordering decimals from least to greatest
Geometric designs
Division
Adding and subtracting monetary amounts
Radius and diameter
Negative numbers on a number line
Comparing fractions to decimals
Two-digit by two-digit multiplication
Congruent shapes
Equivalent fractions
Test 3

Lessons 62 to 81

Classifying triangles by sides and angles
Reading temperatures
Division
Coordinates
Probability trees
Math machines
Geometric designs
Subtracting times
Problems with parenthesis
Labeling lines, segments, and rays
Calculating elapsed times
Add multiple units of times (days, hours, minutes)
Comparing negative numbers
Reviewing angle and line terminology
Finding mixed numbers on a number line.
Multiplication with decimals
Estimating by rounding in multiplication
Adding fractions
Test 4

Scope and Sequence

Lessons 82 to 101

Adding multiple 3-digit numbers
Improper fractions
Comparing time units
Subtracting fractions
Adding and subtracting time
Mixed numbers
Story problems
Measuring degrees of turning
Finding mixed numbers on a number line
Multiplying dollar amounts
Classifying triangles
Labeling angles and triangles
Division of monetary amounts
Geometric turns and flips
Math machines
Geometric designs
Graphing equations (linear equations)
Arranging decimals from least to greatest
Area and perimeter of irregular shapes
Multi-digit subtraction
Test 5

Lessons 102 to 121

Division
Divisibility rules
Graphing lines
Converting fractions to decimals (division)
Simplifying fractions
Finding areas of irregular shapes
Geometric designs
Fractions of whole numbers
Reading a schedule
Rounding decimals
Multiplying 3-digits by 2-digits
Problems with parenthesis
Making graphs
Flips and rotations
Distributive property
Mental math
Story problems
Fractions and mixed numbers
Test 6

Lessons 122 to 141

Add & subtract six and seven digits
Prime and composite numbers
Distributive property
Patterns
Geometric designs
Number patterns
Solids: sides and edges
Factoring
Commutative property
Graphing equations
Line graphs
Associative property
Venn diagrams
Equivalent fractions
Mental math skills
Symmetrical and asymmetrical
Fractions: adding unlike denominators
Multiplication with zeroes
Test 7

Lessons 142 to 160

Estimating quotients
Area of triangles
Converting units of length
Converting units of volume
Add & Subtract fractions with unlike denominators
Estimating products
Flips, slides, rotations
Adding and Subtracting lengths across units
Addition and subtraction with decimals
Multi-digit multiplication
Estimating probability
Story problems
Choosing appropriate units of measure
Long division with 2-digit divisors
Simplifying fractions
Writing mixed numbers for improper fractions
Test 8

Response Book

Most lessons feature an opportunity for students to listen and respond. These are short exercises that review concepts. 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.

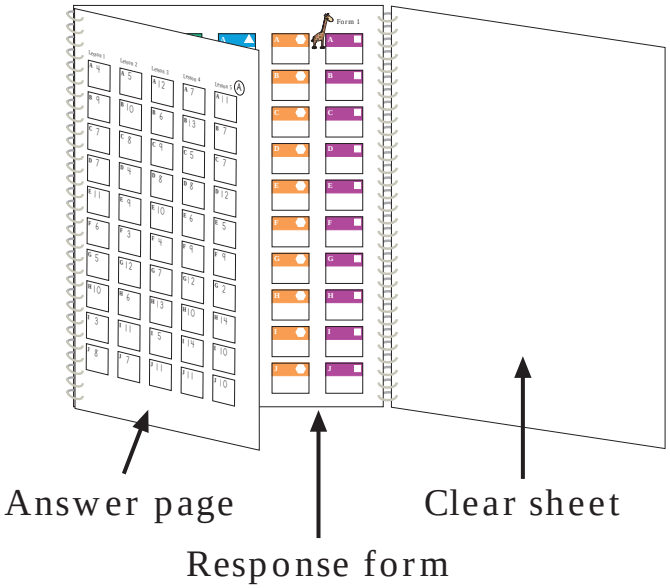
Directions for exercises recorded in the Response Book are stated in the lessons. These are usually easier exercises. The emphasis is on listening and responding. **Teachers may allow or even encourage students to use the appropriate manipulatives to help visualize and solve the problems. Students may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

Exercises contain ten responses that are recorded in a column of boxes. **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.

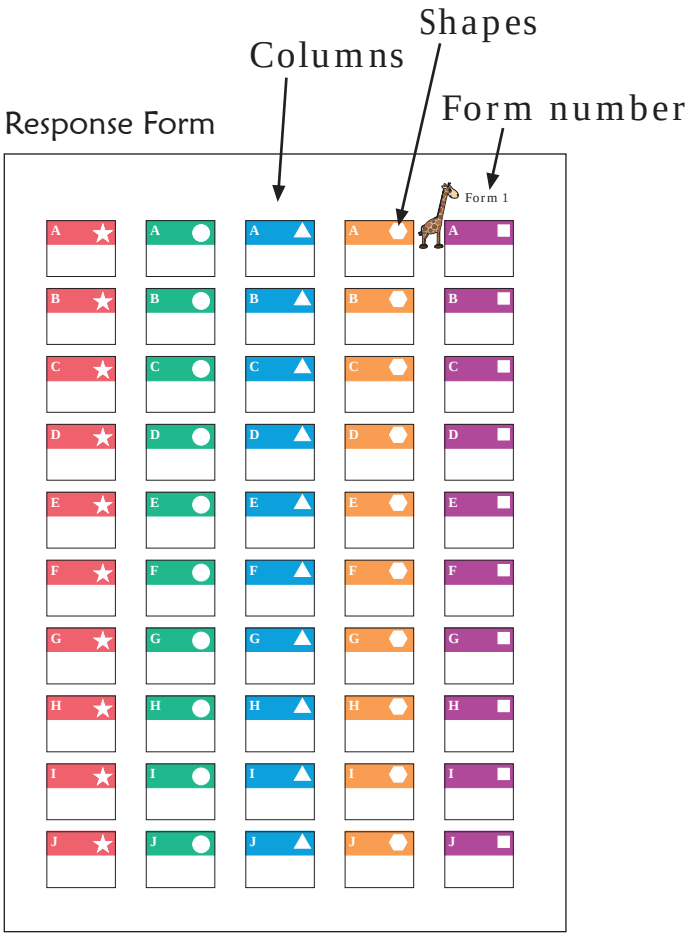
To make the self-checking feature work properly, two important directions must be followed. **The correct form must be used and the correct column must be used**. Form 2 is a flipped version of Form 1, otherwise they are identical. Since answers are printed two-sided, the correct form must be used to 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 (test lessons 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.

The back section of the Response Book is the basic skills mastery portion. It functions differently. See the next page for more details.



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 51

Objectives

1. Students will divide three-digit numbers by a single digit.
2. Students will convert fractions to decimals.
3. Students will find the diameter of a circle.
4. Students will find negative numbers on a number line.

Materials

Ruler (centimeters)

Teaching

1. Start with the response book. **Today we will review basic division facts in the response book. Flip the clear sheet on top of Form 1. I will say two numbers. Divide the first number by the second. Write the quotient in the box. Use the column with stars.**

   A (36, 6), B (80, 8), C (30, 10), D (56, 7), E (99, 9), F (60, 12), G (45, 5), H (12, 4), I (18, 9),

   J (16, 2) Check your answers on page K.

   Workbook: **Solve the long division problems.**

2. **How much is a quarter worth?** (25¢) **How many quarters are in a dollar?** (4) **Twenty-five and four, keep those numbers in mind as we learn to convert twenty-fifths into decimals.** Have students read about 25ths in the workbook. A 25th = 0.04.

   To find the decimal equivalent of other 25ths, multiply the numerator times 0.04. To do that multiply by 4 and move the decimal point two places to the left.

   Workbook: **Change the fractions to decimals.**

3. Use the workbook. **Look at the green circle on the workbook page. Trace the dotted line. The line divides the circle exactly in half. If you measure the line, you will also measure the distance across the circle. This is called the diameter of a circle.**

   Measure the diameter of each circle. Measure in centimeters.

4. **Joe lost his friend's baseball. He wanted to pay his friend for a new one to replace it. He had two dollars. A new one cost five dollars. After he gives his friend all his money, how much will he owe his friend?** (three dollars)

   Before losing the baseball, Joe had two dollars. Now he owes three dollars, so we could say he has minus 3 dollars, or negative 3 dollars. When he gets three more dollars, and gives it to his friend, he will have zero dollars.

   Write: -3. **If we wanted to write what Joe owed as a number, we would write it with a minus sign.**

   Use the workbook: **Look at the number line. What number is in the middle?** (0) **There are numbers less than zero. These are negative numbers. We write them with a minus sign in front of the number. Start at 1. Count back five spaces. What number will you be at?** (-4)

   Follow the directions to find the ending points on the number line.

Workbook Answers

Solve the problems.

$3\overline{)954} = 318$ $\quad 5\overline{)875} = 175$ $\quad 4\overline{)692} = 173$ $\quad 2\overline{)978} = 489$ $\quad 6\overline{)936} = 156$

Fractions: twenty-fifths

To write the fraction $\frac{1}{25}$ as a decimal, write 0.04

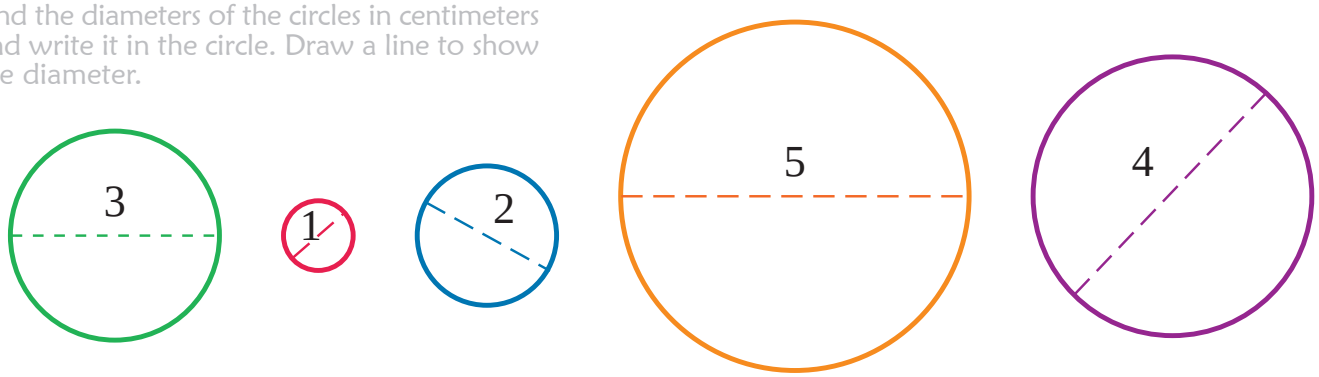
$\frac{7}{25}$ think: 7 x 4 = 28

move the decimal: .28

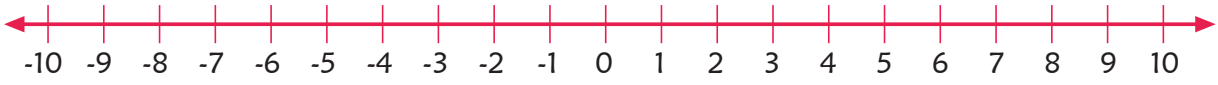
Write a decimal for each of the fractions.

$\frac{2}{25}$ 0.08 $\quad \frac{5}{25}$ 0.2 $\quad \frac{12}{25}$ 0.48 $\quad \frac{23}{25}$ 0.92

Find the diameters of the circles in centimeters and write it in the circle. Draw a line to show the diameter.



Use the number line to find the points.



1. Start at 5. Go back 8 spaces. -3
2. Start at 2. Go back 10 spaces. -8
3. Start at -6. Go forward 9 spaces. 3
4. Start at -2. Go forward 5 spaces. 3
5. Start at -1. Go back 6 spaces. -7
6. Start at -4. Go back 2 spaces. -6
7. Start at -3. Go forward 3 spaces. 0
8. Start at -5. Go forward 15 spaces. 10

Lesson 52

Objectives

1. Students will divide three-digit numbers by a single digit.
2. Students will write decimals for fractions.
3. Students will find the radius of circles.
4. Students will find negative numbers on a number line.

Materials

Fraction Cards
Decimal Cards
Ruler (centimeters)

Teaching

1. Start with the response book. **Today we will review basic division facts in the response book. Flip the clear sheet on top of Form 1. I will say two numbers. Divide the first number by the second. Write the quotient in the box. Use the column with circles.**

   A (35, 7), B (20, 10), C (132, 12), D (77, 11), E (72, 8), F (12, 2), G (4, 1), H (15, 5), I (30, 3),

   J (36, 9) Check your answers on page K.

   Workbook: **Solve the long division problems.**

2. Use the fraction and decimal cards. Have students group the fractions together with equivalent decimals. Next, review 25ths. **What will you do to the numerator to change 25ths into decimals?** (multiply by 4 and move the decimal two places to the left or multiply by 0.04)

   Workbook: **Change the fractions to decimals.**

3. **When you measure across a circle, what is the distance called?** (The diameter) **The distance from the center of the circle to the outside of a circle is called the radius. It is half the distance of the diameter.**

   Workbook: **Look at the green circle on the workbook page. Trace the dashed line. The line measures the radius. Start in the center and measure to the edge. Find the radius of each circle. Measure in centimeters. A black dot has been added to each circle to show the center. Draw lines to show the radius of each circle.**

4. Write -3, -8, -4. **What did we learn to call numbers with minus signs in front of them like these?** (negative numbers) **These are numbers that are less than zero. Look at the number line on the workbook page. Find these points on the number line.** Have students show you the points.

   Workbook: **Read the directions to find the ending points. Write them on the lines.**

Workbook Answers

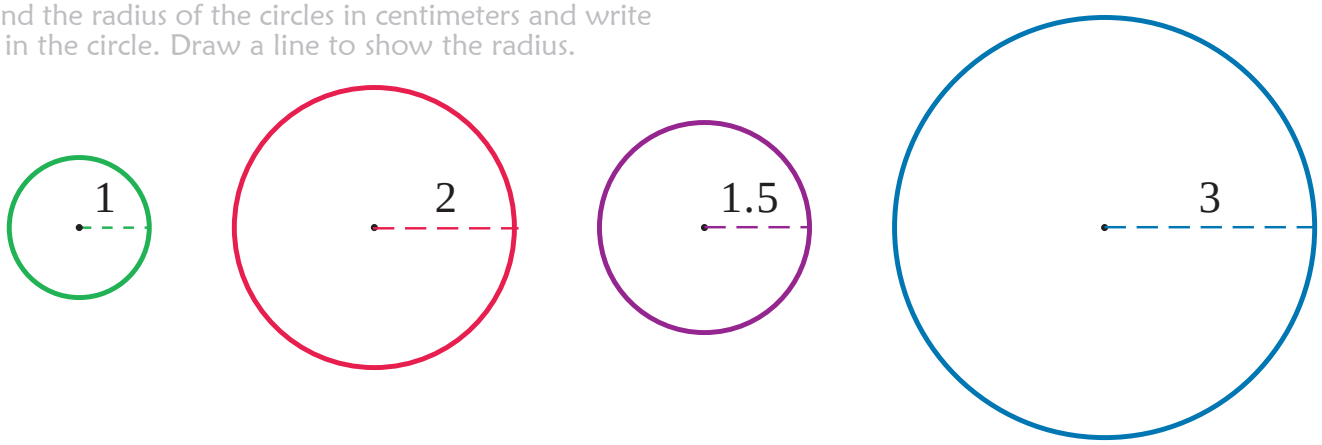
Solve the problems.

$9\overline{)810} = 90$ $\quad 7\overline{)616} = 88$ $\quad 4\overline{)628} = 157$ $\quad 8\overline{)448} = 56$ $\quad 3\overline{)891} = 297$

Write a decimal for each of the fractions.

$\frac{3}{25} = 0.12$ $\quad \frac{10}{25} = 0.40$ $\quad \frac{22}{25} = 0.88$ $\quad \frac{15}{25} = 0.60$ $\quad \frac{7}{25} = 0.28$ $\quad \frac{24}{25} = 0.96$

Find the radius of the circles in centimeters and write it in the circle. Draw a line to show the radius.



Use the number line to find the points.

1. Start at 3. Go back 10 spaces. -7
2. Start at 0. Go back 6 spaces. -6
3. Start at -7. Go forward 15 spaces. 8
4. Start at -4. Go forward 5 spaces. 1
5. Start at -7. Go back 3 spaces. -10
6. Start at -3. Go back 3 spaces. -6
7. Start at 2. Go forward 3 spaces. 5
8. Start at -8. Go forward 4 spaces. -4

Lesson 53

Objectives

1. Students will divide three-digit numbers by a single digit.
2. Students will write decimals for fractions.
3. Students will find the diameter and radius of circles.
4. Students will compare negative numbers.

Materials

Fraction Cards
Decimal Cards
Ruler (centimeters)

Teaching

1. Start with the response book. **Today we will review basic division facts in the response book. Flip the clear sheet on top of Form 1. I will say two numbers. Divide the first number by the second. Write the quotient in the box. Use the column with triangles.**

   A (42, 6), B (36, 12), C (7, 1), D (44, 4), E (25, 5), F (56, 7), G (54, 9), H (48, 12), I (18, 2),

   J (100, 10) Check your answers on page K.

   Workbook: **Solve the long division problems.**

2. Use the fraction and decimal cards. Have students group the fractions together with equivalent decimals. Next, review 25ths. **What will you do to the numerator to change 25ths into decimals?** (multiply by 4 and move the decimal two places to the left or multiply by 0.04)

   Today you will learn how to write decimals for hundredths. It's very simple. Look at the denominator and move the decimal two places to the left. If the numerator is a single digit, you'll have to place a zero between the number and the decimal. Look at the workbook to see how to change the fraction to a decimal.

   Workbook: **Change the fractions to decimals.**

3. **When you measure across a circle, what is the distance called?** (The diameter) **What is the distance from the center of the circle to the edge called?** (The radius)

   Workbook: **Look at the numbers in the circles. The numbers are either the diameter of the circle or the radius. Write D for diameter or R for radius to show what the number measures.**

4. Write -2 and -7 and have students look at the number line on the workbook page. **Which of these two numbers is farthest to the right?** (-2) **The farther to the right a number is on the number line, the larger or greater it is. So, -2 is greater than -7. It's the opposite of when there is not a minus sign in front of the number.**

   Which is greater, -1 or 5? (5) **Which is greater, -3 or 0?** (0)

   Workbook: **Compare the numbers and write a greater than or less than sign in the circles.**

Workbook Answers

Solve the problems.

$2\overline{)956} = 478$ $\quad 6\overline{)342} = 57$ $\quad 7\overline{)602} = 86$ $\quad 5\overline{)960} = 192$ $\quad 9\overline{)927} = 103$

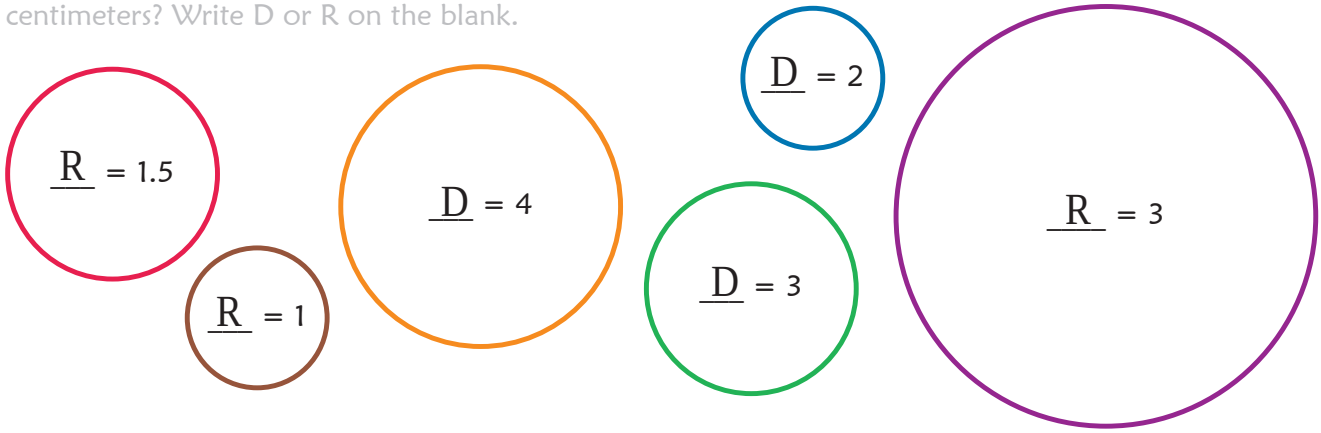
Fractions: hundredths

To write the fraction $\frac{1}{100}$ as a decimal, write 0.01

Write a decimal for each of the fractions.

$\frac{7}{100}$ 0.07 $\quad \frac{33}{100}$ 0.33 $\quad \frac{16}{100}$ 0.16 $\quad \frac{4}{100}$ 0.04

Is the number in each circle the diameter or radius in centimeters? Write D or R on the blank.



Use the number line to compare numbers. Fill in > or <.

-7 > -10 $\quad$ -5 < 1 $\quad$ 0 > -4 $\quad$ -3 < 3 $\quad$ 6 > -2

-9 < -8 $\quad$ 0 < 2 $\quad$ -4 > -6 $\quad$ -5 < 0 $\quad$ 7 > -8

Lesson 54

Objectives

1. Students will divide three-digit numbers by a single digit.
2. Students will write decimals for fractions.
3. Students will review angles.
4. Students will compare negative numbers.

Materials

Fraction Cards
Decimal Cards

Teaching

1. Start with the response book. **Today we will review basic division facts in the response book. Flip the clear sheet on top of Form 1. I will say two numbers. Divide the first number by the second. Write the quotient in the box. Use the column with hexagons.**

   A (21, 7), B (12, 6), C (55, 11), D (24, 3), E (15, 3), F (77, 7), G (60, 10), H (108, 9), I (10, 1),

   J (72, 9) Check your answers on page K.

   Workbook: **Solve the long division problems.**

2. Use the fraction and decimal cards. Have students group the fractions together with equivalent decimals. Next, review 25ths. **What will you do to the numerator to change 25ths into decimals?** (multiply by 4 and move the decimal two places to the left or multiply by 0.04) **We can think of the same thing for 20ths. Instead of multiplying by 4, multiply the numerator by 5.**

   How do you write decimals for hundredths? (Write the numerator and move the decimal two places to the left.)

   Workbook: **Change the fractions to decimals.**

3. Review the names of angles. **If an angle is less than 90° what do we call the angle?** (acute) **If it is greater than 90°, what kind of angle is it?** (obtuse) **If the angle equals 90°, what kind of angle is it?** (a right angle)

   Workbook: **Fill in the circle to identify each angle.**

4. Workbook:**What numbers can take the place of the fish? Fill in the circles in front of the numbers that make the statements true. Draw an X on the fish that doesn't have an answer.**

Workbook Answers

Solve the problems.

$5\overline{)390} = 78$ $\quad 3\overline{)954} = 318$ $\quad 8\overline{)992} = 124$ $\quad 6\overline{)810} = 135$ $\quad 4\overline{)964} = 241$

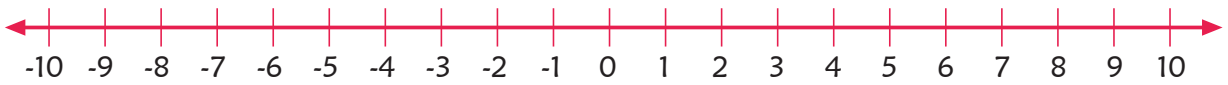
Write a decimal for each of the fractions.

$\frac{10}{100}$ 0.1	$\frac{10}{25}$ 0.4	$\frac{10}{20}$ 0.5	$\frac{20}{25}$ 0.8	$\frac{16}{20}$ 0.8	$\frac{80}{100}$ 0.8
$\frac{4}{25}$ 0.16	$\frac{12}{20}$ 0.6	$\frac{15}{25}$ 0.6	$\frac{13}{20}$ 0.65	$\frac{5}{100}$ 0.05	$\frac{50}{100}$ 0.5

Mark the types of angles. Fill in the circles.

● right ○ acute ○ obtuse	○ right ● acute ○ obtuse	○ right ○ acute ● obtuse	○ right ● acute ○ obtuse	● right ○ acute ○ obtuse	○ right ○ acute ● obtuse

Fill in the circle next to each number that can take the place of the fish to make the inequality true. More than one answer may be possible, so fill in all of the choices that are true. Draw an X on the fish that has no answer.



-6 > <-9 ○ -8 ● -10 ○ -5	-4 < <0 ● -3 ● -1 ○ 1	3> >-5 ● 0 ○ -9 ● 2	2 > <-3 ● -4 ● -7 ● -6
-7> >0 ○ -2 ○ 4 ○ -9	-8 < <-2 ● -5 ○ -1 ● -7	5 > >-3 ● 2 ● 0 ○ -4	-1 > >-4 ○ -5 ○ 0 ● -3

Lesson 55

Objectives

1. Students will divide three-digit numbers by a single digit.
2. Students will find the diameter and radius of circles.
3. Students will write decimals for fractions.
4. Students will make pentomino designs.

Materials

Pentominoes
One inch grid paper (resource pack, 5 sheets)

Teaching

1. Start with the response book. **Today we will review basic division facts in the response book. Flip the clear sheet on top of Form 1. I will say two numbers. Divide the first number by the second. Write the quotient in the box. Use the column with squares.**

   A (33, 3), B (24, 4), C (40, 8), D (81, 9), E (70, 10), F (55, 5), G (84, 7), H (49, 7), I (22, 11),

   J (60, 6) Check your answers on page K.

   Workbook: **Solve the long division problems.**

2. **What is the distance from the center of the circle to the edge called?** (The radius)
   When you measure across a circle, what is the distance called? (The diameter)

   Workbook: **Inside each circle are several lines. In the first set of circles, find the diameters and trace the lines. In the second set of circles, find the radius and trace the lines.**

3. Workbook: **Fill in the circles that equal each decimal. Fill in all circles that are true. You may fill in more than one circle in each box.**

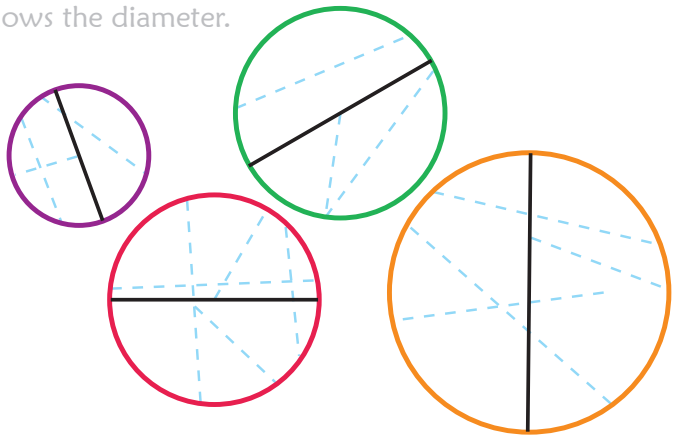
4. Use pentominoes and one inch grid paper to make the designs in the workbook. **Build each design on a piece of one inch grid paper. Line the pieces up on the lines. Trace the outside of the designs and try to build them with other pieces.**

   Make a new design on grid paper and build it different ways.

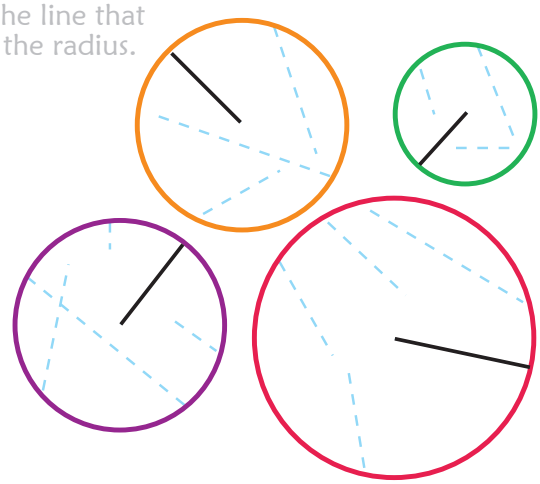
Solve the problems.

$4\overline{)272} = 68$ $\quad 7\overline{)882} = 126$ $\quad 2\overline{)696} = 348$ $\quad 9\overline{)405} = 45$ $\quad 8\overline{)688} = 86$

Trace the line that shows the diameter.



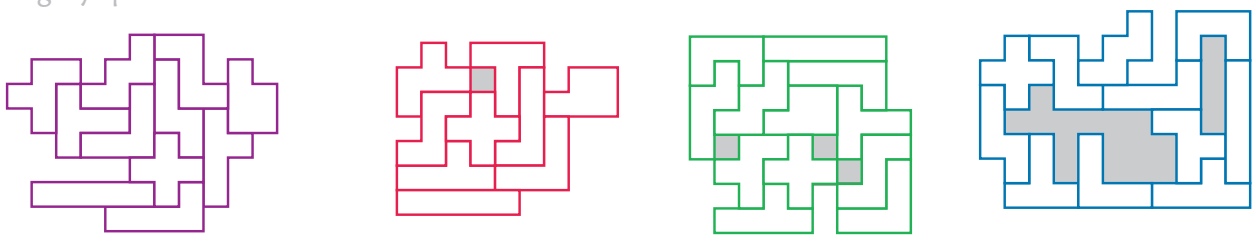
Trace the line that shows the radius.



Fill in the circles by the fractions that make the statements true. There may be more than one correct answer. Fill in the circle next to every fraction that makes it true.

● $\frac{16}{20}$ ● $\frac{20}{25}$ ● $\frac{80}{100}$ = 0.8	○ $\frac{6}{25}$ ● $\frac{40}{100}$ ● $\frac{8}{20}$ = 0.4
● $\frac{50}{100}$ ● $\frac{10}{20}$ ○ $\frac{15}{25}$ = 0.5	○ $\frac{25}{100}$ ● $\frac{5}{25}$ ● $\frac{4}{20}$ = 0.2

Make the designs with pentominoes. Can you make the same shapes switching out with some pieces? Trace the outsides of the designs on 1 inch grid paper and try other combinations of pentomino pieces. The gray spaces are not covered.



Lesson 87

Objectives

1. Students will multiply dollar amounts.
2. Students will change mixed numbers into improper fractions.
3. Students will measure degrees of turning.
4. Students will add mixed numbers.

Materials

Degree Circle mat (laminated page)
One Inch Cubes

Teaching

1. Workbook: **Multiply the dollar amounts.**

2. Start with the response book. **Use form 2, the column with circles.**

   In this exercise, I will say a mixed number. Use mental math to make it an improper fraction and write just the numerator of the improper fraction. For example, if I said 2 1/4, you would write 9 as your answer, because 2 1/4 = 9/4.

   A (1 7/8), B (3 2/5), C (2 1/2), D (4 3/4), E (6 2/3), F (5 1/4), G (7 1/2), H (2 5/6), I (8 1/3), J (5 2/5)

   Check your answers on page R.

   Workbook: **Change the row of mixed numbers into improper fractions.**

3. Use the Degree Circle mat and one inch cubes. **Place a purple and green cube on the Degree Circle mat, like the first cube set on the workbook page. See how it turns. How many degrees did it turn?** (45°) **Write 45° on the lines by the purple and green cubes.**

   Make the next combination of cubes and turn it to match the turn. Write the number of degrees it turned on the lines.

4. Write the first problem: 1 1/5 + 2 3/5. **Add the mixed numbers. To do this, add the whole numbers together, then add the fractions together. 1 + 2 = 3, 1/5 + 3/5 = 4/5. 1 1/5 + 2 3/5 = 3 4/5. Find 3 4/5 on the number line and write an A under the spot on the number line.**

   Workbook: **Write the sums on the lines. Label the number lines with the letters to match the sums.**

Workbook Answers

Solve the problems.

$58.22 x 8	$12.65 x 2	$91.58 x 4	$17.86 x 9
$465.76	$25.30	$366.32	$160.74

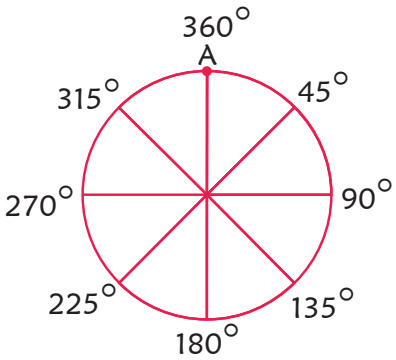
Write improper fractions for the mixed numbers.

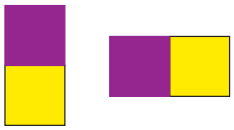
$6\frac{3}{4}$ $\frac{27}{4}$ $2\frac{10}{16}$ $\frac{42}{16}$ $3\frac{7}{12}$ $\frac{43}{12}$ $10\frac{2}{7}$ $\frac{72}{7}$ $1\frac{5}{6}$ $\frac{11}{6}$

Describe the turn in degrees. Assume objects are turned clockwise.

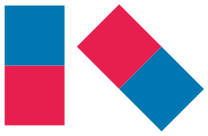
45°

180°





270°



135°

90°

Use the number lines to add the mixed numbers. Write the answers as mixed numbers. Show the totals on the line by adding the letter.

A $1\frac{1}{5} + 2\frac{3}{5} = 3\frac{4}{5}$ B $3\frac{1}{5} + 3\frac{1}{5} = 6\frac{2}{5}$ C $4\frac{1}{5} + 1\frac{2}{5} = 5\frac{3}{5}$

D $2\frac{2}{4} + 2\frac{3}{4} = 5\frac{1}{4}$ E $3\frac{1}{4} + 4\frac{1}{4} = 7\frac{2}{4}$ F $1\frac{1}{4} + 7\frac{2}{4} = 8\frac{3}{4}$

Lesson 137

Objectives

1. Students will subtract seven-digit numbers.
2. Students will add fractions with unlike denominators.
3. Students will identify properties.
4. Students will factor numbers.
5. Students will match coordinates to equations.

Materials

Line Graphing Grid Lesson 137 (resource pack)

Teaching

1. Workbook: **Subtract the seven-digit numbers.**

2. **We've multiplied to make fractions have like denominators so they can be added. Sometimes fractions can be simplified instead. This will help make the sum a simplified fraction, too. Check to see if one of the fractions can be simplified by looking at the smaller numbered denominator. Is the smaller denominator a factor or the larger denominator? If yes, divide it and find the quotient. Is the numerator divisible by that quotient? If so, divide it. That will be the numerator of the simplified fraction. The denominator will be the denominator of the smaller fraction.**

   For example: 4/8 + 1/2. 2 is the smaller denominator. Divide it into the larger denominator, 8. 8 ÷ 2 = 4. Now divide 4 into the denominator of 4/8. 4 ÷ 4 = 1. 1/2 + 1/2.

   Workbook: **Add the fractions. Remember, one fraction will need to be changed to have a common denominator. Look for a fraction that can be simplified to match the denominator of the other one.**

3. Workbook: **Match the properties to the examples.**

4. Start with the response book. **Use form 2 the column with circles. I will say a number. Write a capital P in the box if it is a prime number. Write a capital C if it is a composite number.**

   A (17), B (61), C (83), D (65), E (91), F (92), G (21), H (71), I (29), J (57)

   Check your answers on page BB.

   Workbook: **Find the factors for each number.**

5. Workbook: **Match the (x,y) pairs to the equations that produced them. Write the letters on the lines. Calculate one more (x,y) pair for each equation. Use numbers that make x and y 15 or less.**

   Use the Line Graphing Grid. **Graph the lines on the paper. Label the lines using the letters you wrote in the blanks (A to F).**

Workbook Answers

Solve the problems.

5,375,509	9,574,125	6,883,047
- 2,604,311	- 3,482,304	- 6,792,137
2,771,198	6,091,821	90,910

Add the fractions with unlike denominators. Divide one of the fractions.

$\frac{3}{9} \div \frac{3}{3} + \frac{1}{3} = \frac{1}{3} + \frac{1}{3} = \frac{2}{3}$

$\frac{5}{8} + \frac{2}{16} \div \frac{2}{2} = \frac{5}{8} + \frac{1}{8} = \frac{6}{8}$

$\frac{6}{15} \div \frac{3}{3} + \frac{2}{5} = \frac{2}{5} + \frac{2}{5} = \frac{4}{5}$

$\frac{10}{14} \div \frac{2}{2} + \frac{5}{7} = \frac{5}{7} + \frac{5}{7} = \frac{10}{7}$

Match the properties to the examples.

B	Distributive Property	A	4 x 2 x 9 = 4 x (2 x 9)
C	Commutative Property	B	4 x (2 + 9) = (4 x 2) + (4 x 9)
A	Associative Property	C	4 x 2 x 9 = 9 x 4 x 2

Find the factors for these numbers. Start by checking for divisibility.

22 1, 2, 11, 22

38 1, 2, 19, 38

8 1, 2, 4, 8

40 1, 2, 4, 5, 8, 10, 20, 40

Match the (x,y) pairs to the equations. Choose the equations labeled A to F. Write letters A to F on the blanks. Write a second set of coordinates und each x,y pair. Keep both numbers to 15 or less.

A $x + 5 = y$ B $3x + 6 = y$ C $5x - 5 = y$ D $4x - 2 = y$ E $2x + 5 = y$ F $3x - 4 = y$

C (4,15)	F (4,8)	D (4,14)	A (4,9)	B (4,18)	E (4,13)
Answers vary.					
(___, ___)	(___, ___)	(___, ___)	(___, ___)	(___, ___)	(___, ___)