

Grade 3 Curriculum Overview

Numbers and Operations in Base Ten

- Round whole numbers to the nearest 10 or 100.
- Multiply one-digit whole numbers by multiples of 10.
- Identify the place value of numbers up to 10,000 and know the numerical value of each place.
- Order and compare whole numbers up to 10,000.
- Compare numbers using symbols greater than, less than or equal to.
- Identify odd, even and prime numbers.
- Write numbers using expanded notation (e.g. $5,816 = 5,000 + 800 + 10 + 6$).
- Find the sums and differences of numbers up to 10,000 with up to two regroupings.
- Multiply a one-digit number by up to a three-digit number.
- Multiply and divide by 1; multiply by 0.
- Change addition problems into multiplication problems (e.g. $4 + 4 + 4 = 3 \times 4$).
- Divide a two-digit number by a one-digit number with and without a remainder.
- Identify numbers using the multiplicative process (e.g. $5,816 = 5 \times 1000 + 8 \times 100 + 1 \times 10 + 6 \times 1$).
- Complete fact families using the inverse relationship of addition and subtraction; multiplication and division.
- Find the percent of a number (e.g. what is 50% of 10?).
- Add and subtract decimals up to the hundredth place.
- Generate equivalent forms of numbers (e.g. $49 = 48 + 1$, $49 = 52 - 3$).
- Identify 10, 100, 1,000, and 10,000 in terms of 10 (e.g. $1,000 = 10 \times 100$).
- Convert written multiples of 10 to numerals (e.g. 10 thousands = 10,000).
- Use mental arithmetic to add and subtract (e.g. 5 more than 565).
- Halve and double numbers.
- Identify the divisor, dividend, quotient and remainder in a division problem.
- Solve problems by continuing the pattern according to its rule (e.g. 1 car = 4 wheels).
- Select correct operations symbol to make a number sentence true (e.g. $3 \ ? \ 4 = 7$).
- Solve problems using commutative and associative properties of multiplication and addition.
- Determine the cost of one item when given the number of items and the total cost.
- Extend repeating and growing patterns.
- Determine the value of a variable in an equation (e.g. $4 + n = 10$).

Numbers and Operations – Fractions

- Compare, order and evaluate fractions on a number line.
- Find equivalent fractions (e.g. $\frac{1}{2} = \frac{2}{4}$).
- Show whole numbers as fractions on a number line.
- Compare fractions on a number line using symbols greater than, less than or equal to.
- Add and subtract simple fractions.
- Identify the numerator and denominator of a fraction.
- Divide fractions with same denominator into equal units (e.g. $\frac{3}{4} = \frac{1}{4} + \frac{1}{4} + \frac{1}{4}$).
- Compare fractions using models to determine the largest and the smallest.
- Identify numbers and fractions using ten and hundred blocks.

Measurement and Data

- Perform simple unit conversions within a system of measurement (e.g. 52 weeks = 1 year).
- Identify the appropriate tools to use for measurement (e.g. a scale to measure weight).
- Identify the appropriate unit of measure to use (e.g. use pounds to measure weight).
- Add and subtract time intervals in minutes using a number line diagram.
- Determine the fractional portion of an hour given the number of minutes (e.g. 15 minutes = $\frac{1}{4}$ hour).
- Determine how much time has elapsed.
- Solve problems using both analog and digital clocks; classify events by relating them to AM or PM.
- Read a calendar by identifying days and dates.

- Add liquid volumes using drawings.
- Answer questions about data in a bar graph (horizontal and vertical), charts and tally charts.
- Find area and perimeter of a given figure.
- Find the unknown side of a rectangle given the length of one side and its perimeter.
- Compare rectangles that have the same areas but different perimeters.
- Compare rectangles that have same perimeters but different areas.
- Use estimation to determine correct measurements of length and weight.
- Determine decimal representations of a penny, nickel, dime, quarter and half-dollar.
- Add, subtract, multiply, divide and count money using dollars and cents; round to the nearest dollar.
- Determine the amount of change to be received from a transaction.
- Calculate the value of one unit when given the number of equal units and total cost.
- Write a given amount of money using the correct placement of the decimal and the dollar symbol.
- Identify the temperature on a thermometer in Fahrenheit and Celsius plus the boiling and freezing points of water.

Geometry

- Recognize the shared attributes of quadrilaterals.
- Determine fractional units of the area of a whole.
- Identify polygons including pentagon, hexagon and octagon.
- Identify triangles by their attributes (e.g. three equal sides is an equilateral triangle).
- Identify right, acute and obtuse angles.
- Identify three-dimensional geometric shapes: cube, sphere, cone, rectangular prism, and cylinder.
- Identify the attributes of three-dimensional objects such as faces and vertices.
- Identify the radius and the diameter of a circle.
- Compose two shapes to make a new shape.
- Name the properties of a square (e.g. right angles and equal sides).
- Show the concept of area by determining how many smaller shapes will cover a larger shape.
- Determine whether shapes are congruent or similar.
- Use ordered pairs to locate points on a grid.
- Identify parallel, perpendicular and intersecting lines.

Problem Solving

- Use estimation to determine the reasonableness of an answer.
- Evaluate the reasonableness of a given solution.
- Determine whether information is relevant, irrelevant or is missing in order to solve a word problem.

Data, Statistics and Probability

- Determine whether the outcome of events are likely, unlikely, certain or impossible.
- When comparing two events, determine whether the outcome is more or less likely.
- Calculate the probability of an event; determine the number of possible combinations.
- Transfer information from a chart to a bar graph.
- Interpret values on a chart where a symbol represents more than one unit.
- Predict future events based on data from past events.
- Identify the mode, mean, median and range of a given set of number.

Extras: Multiplication and Division Flash Cards, Math Facts Sharpener Sheets, Hundred Chart

GRADE 3 HELP PAGES

ESTIMATION

We estimate when:

- 1) An estimate is as good as the actual number (an exact number isn't needed).
- 2) There is no way to get an exact answer.
- 3) It is too hard to get the exact answer.
- 4) We want to check whether an exact answer is reasonable.

We use rounding when estimating.

Example:

68	→	round up to	70
+ 33	→	round down to	+ 30
<u>101</u>	←		<u>100</u>
actual		estimate	

DOUBLING

Doubling is the process of adding a number to itself. The concept of multiplication times 2 can be introduced.

Memorizing doubles to 15 is a helpful strategy for both addition and subtraction.

The *inverse* process of doubling is *halving* and should be noted as well.

50 doubled is 100

$$50 + 50 = 100 \quad \text{or} \quad 50 \times 2 = 100$$

100 halved is 50

$$100 - 50 = 50 \quad \text{or} \quad 100 \div 2 = 50$$

IMPORTANT!

Instructions for Parents

- To use Summer Math Skills Sharpener, simply tear off a page and have your child complete both sides. The program is designed to be used 3-4 days per week for 10 weeks.
- Our math books now support the Common Core Curriculum and the Standards of all 50 states. Therefore, some materials may not have been presented to your child. **Please allow your child to skip concepts not yet learned. Introduce new concepts only if your child shows readiness.**
- Check answers immediately for optimal feedback. You may want to offer small incentives to your child for pages successfully completed. An answer sheet is provided at the back of the book. A Lesson Tracker has been included for your convenience.
- **Help pages** have been added at the front of the book to clarify certain concepts.



- Allow your child to use a calculator only for those problems using this icon.



- **Hundred Chart:** Problems designated with this icon are to be used with the chart at the back of the book. Your child may use buttons, beans, coins, etc. as markers.



- **Dalmatian Station:** Problems with this icon are to be used with the Dalmatian chart at the back of the book. Your child may use buttons, beans, coins, etc. as markers.



- **Punch-Out Sticks:** Punch-out sticks have been provided to assist with visualizing some concepts. When this icon appears, simply have your child count out the required number of sticks and manipulate them to suit the problem.



- **Hands-on:** The problems with this designation indicate a short activity using ordinary household items.



- **Mental math:** Problems with this icon are to be solved without pencil and paper.

- Addition and subtraction flash cards are provided for extra practice.
- “Math Facts Sharpener” pages are located at the back of the book. Have your child complete one side of each of the five pages weekly.
- Adjust this book to your vacations, etc. Presentation of mixed concepts on every page ensures that all skills are reinforced. Therefore, pages may be used in any order.
- If your child experiences difficulty with a few concepts that have been taught in the classroom, address the problem with his or her teacher in the fall; more consistent problems indicate that a tutor may be needed.

We appreciate your comments. Please send us the evaluation page included in this book before November 1st, after your child has returned to school in the fall and you are able to determine the success of the Summer Math Skills Sharpener.

Thank you for your assistance.

Lesson #17

1. A.  $\times 4 =$ _____ B.  $\times 4 =$ _____

2. Complete this pattern: 125, 129, 133, _____, _____

3. Round these numbers to the nearest 100:

A. 136 _____ B. 281 _____

4.  $40 + 5 - 2 + 1 =$ _____



5. Kellen bought a muffin for each student in his class. He bought 4 boxes of muffins. Each box held 6 muffins. There were none left over. How many students are in Kellen's class? _____

6. What means the same as 3×4 ? Circle:

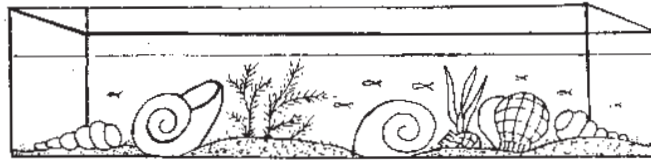
A. $3 + 3 - 3 + 3$ B. $3 + 4 + 3 + 4$ C. $3 + 4 \times 3 + 4$

7. Find the difference:

$$\begin{array}{r} 4,607 \\ - 1,562 \\ \hline \end{array}$$


Lesson #17 (continued)

8.
$$\begin{array}{r} 50 \\ \times \square \\ \hline 100 \end{array}$$



9. Will an aquarium hold more or less than 1 liter of water? _____

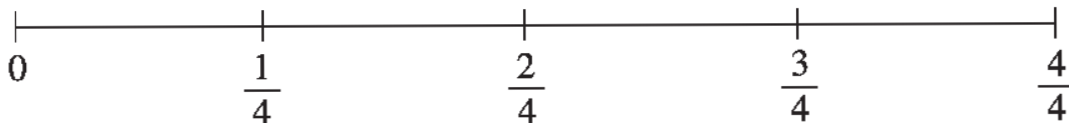
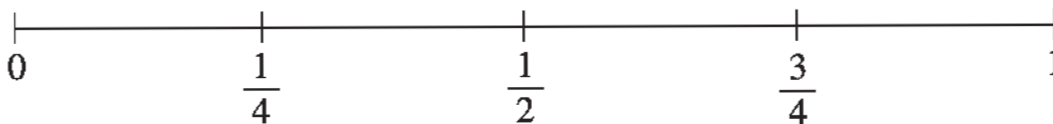
10. Look at the box below and fill in the missing numbers.

X	X	X	X
X	X	X	X
X	X	X	X

A. $4 = 12 \div \square$

B. $3 = 12 \div \square$

11. Look at the two fraction number lines below and answer the questions.



A. Does $\frac{1}{2} = \frac{2}{4}$? _____

B. $1 = \frac{\square}{4}$



Lesson #20

1. Choose the best estimate for the cost of a child's jacket.

A. \$3 B. \$30 C. \$300 _____

2. I have 3 coins in my pocket. They equal 36¢. What 3 coins do I have?

3. Fill in the missing number:

$$\begin{array}{r} 7R4 \\ 8 \overline{) \square} \end{array}$$

4. How many hours is it from 12:15 a.m. to 7:15 a.m.? _____

5. Taylor is bringing gum to a sleepover. Each pack contains 5 pieces of gum.

18 girls will be at the sleepover. How many packs of gum will she need to bring for each girl to have a piece? _____



6. Fill in the sign: + - X or ÷

$$49 \square 10 = 39$$



Lesson #20 (continued)

7. Fill in the sign. $> < = ?$ (smaller than, larger than, equal to)

$$1,045 \square 1,450$$

8. What is 100 more than 357? _____

9. Use this multiplication sentence to write two division sentences: $6 \times 7 = 42$

A. $42 \div \square = 6$

B. $42 \div \square = 7$



10. Six small airplanes are at the airport. There are 57 people waiting to fly. If each plane carries 9 people, how many people will not be able to fly?

What two functions are needed to solve the following problem? Circle the answers.

A. addition B. subtraction C. division D. multiplication

11. Look at the chart below to find how many books Parker and Leo read.

Parker	   
Leo	 

Circle the correct answer.

A. Parker read (2 times 3 times 4 times) as many books as Leo.

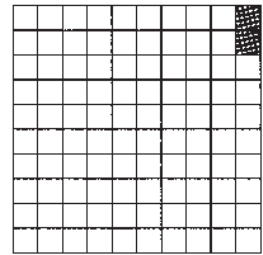
B. Write a multiplication sentence to show how many books Parker read.

_____ $\times$ _____ = _____



Lesson #34

1. Look at the hundred block to the right. Two squares are shaded. The **decimal** that shows this is .02
What would the decimal be if three boxes were shaded?



2. If one pencil costs 35¢, what do seven pencils cost? \$____.

3. A. $8 \times \boxed{} = 32$

B. $4 \times \boxed{} = 32$

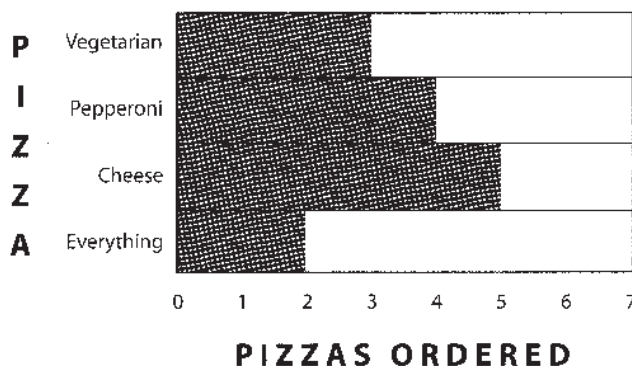
4. If $\frac{3}{4} = \frac{1}{4} + \frac{1}{4} + \frac{1}{4}$, what does $\frac{5}{8}$ equal?

$$\frac{5}{8} = \underline{\hspace{1cm}} + \underline{\hspace{1cm}} + \underline{\hspace{1cm}} + \underline{\hspace{1cm}} + \underline{\hspace{1cm}}$$

5. On the **horizontal bar graph** below:

A. What was the most popular type of pizza? _____

B. What was the least popular type of pizza? _____



6. Match the following:

A. gallons measure

length

B. grams measure

volume

C. yards measure

weight



Lesson #34 continued

7. How many  would you need to cover this square? _____



8. Underline the two **congruent** (same shape, same size) shapes below.
X the two **similar** (same shape, different size) shapes.



9. Continue the number pattern: 16 13 10 7 _____

10. Carlos was paid \$15.00 for cutting the lawn. At the school store he purchased a pencil case for \$2.75, a rainbow tablet for \$1.50 and a pencil for 35¢.

A. How much change will he receive from a \$5 bill? _____

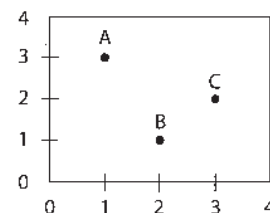
B. Underline the information you do not need to solve this problem.

11. Below is an ice cream cone with three scoops of ice cream arranged in this order: cherry, coffee and mint. How many **other** scoop arrangements can be made using **all** three of these flavors? _____



12. Find the following **coordinates** (points) on the graph:

2, 1 _____ 3, 2 _____ 1, 3 _____



HUNDRED CHART

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

Math Facts Sharpener • Grades 3 and 4

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

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

$$\begin{array}{r} 5 \\ \times 9 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ \times 5 \\ \hline \end{array}$$

$$\begin{array}{r} 3 \\ \times 7 \\ \hline \end{array}$$

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

$$\begin{array}{r} 7 \\ \times 5 \\ \hline \end{array}$$

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

$$\begin{array}{r} 3 \\ \times 5 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ \times 4 \\ \hline \end{array}$$

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

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

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

$$\begin{array}{r} 3 \\ \times 9 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \\ \times 4 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ \times 3 \\ \hline \end{array}$$

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

$$\begin{array}{r} 4 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ \times 3 \\ \hline \end{array}$$

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

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

$$\begin{array}{r} 5 \\ \times 3 \\ \hline \end{array}$$

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

$$\begin{array}{r} 9 \\ \times 8 \\ \hline \end{array}$$

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

$$\begin{array}{r} 4 \\ \times 9 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \\ \times 7 \\ \hline \end{array}$$

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

$$\begin{array}{r} 8 \\ \times 3 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ \times 5 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ \times 7 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ \times 5 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ \times 1 \\ \hline \end{array}$$

$$\begin{array}{r} 3 \\ \times 8 \\ \hline \end{array}$$

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

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

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

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

$$\begin{array}{r} 6 \\ \times 9 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ \times 9 \\ \hline \end{array}$$

$$\begin{array}{r} 1 \\ \times 7 \\ \hline \end{array}$$

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

$$\begin{array}{r} 4 \\ \times 7 \\ \hline \end{array}$$

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

$$\begin{array}{r} 9 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ \times 9 \\ \hline \end{array}$$

Math Facts Sharpener • Grades 3 and 4

$3 \div 1 =$

$63 \div 9 =$

$42 \div 6 =$

$20 \div 5 =$

$15 \div 3 =$

$6 \div 3 =$

$24 \div 3 =$

$18 \div 6 =$

$36 \div 6 =$

$3 \div 3 =$

$10 \div 2 =$

$21 \div 7 =$

$2 \div 1 =$

$72 \div 9 =$

$56 \div 8 =$

$30 \div 5 =$

$25 \div 5 =$

$8 \div 2 =$

$24 \div 4 =$

$63 \div 7 =$

$18 \div 9 =$

$40 \div 8 =$

$6 \div 2 =$

$54 \div 9 =$

$12 \div 2 =$

$9 \div 3 =$

$5 \div 5 =$

$28 \div 4 =$

$64 \div 8 =$

$36 \div 9 =$

$4 \div 2 =$

$12 \div 4 =$

$16 \div 4 =$

$18 \div 9 =$

$35 \div 7 =$

$32 \div 8 =$

10

$$\begin{array}{r} 1 \\ \times 8 \\ \hline \end{array}$$

12

$$\begin{array}{r} 1 \\ \times 7 \\ \hline \end{array}$$

14

$$\begin{array}{r} 1 \\ \times 6 \\ \hline \end{array}$$

4

$$\begin{array}{r} 1 \\ \times 5 \\ \hline \end{array}$$

6

$$\begin{array}{r} 1 \\ \times 4 \\ \hline \end{array}$$

8

$$\begin{array}{r} 1 \\ \times 3 \\ \hline \end{array}$$

9

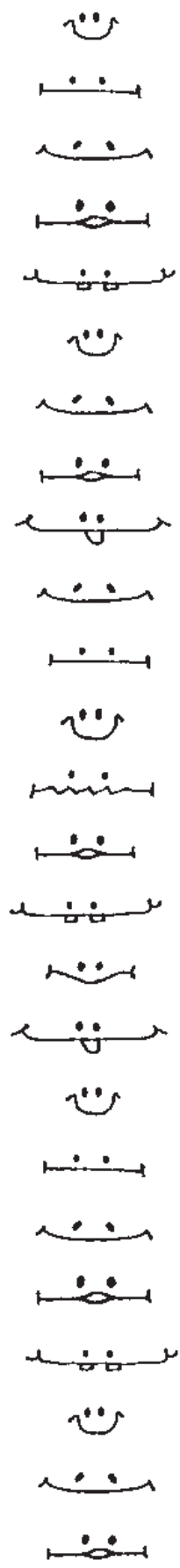
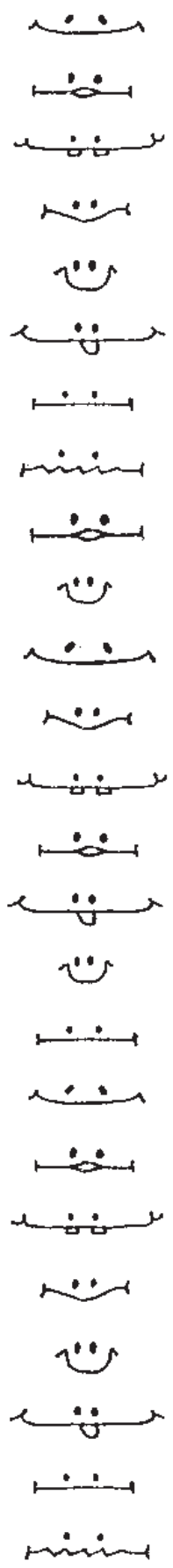
$$\begin{array}{r} 1 \\ \times 2 \\ \hline \end{array}$$

0

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

2

$$\begin{array}{r} 1 \\ \times 0 \\ \hline \end{array}$$



PUNCH-OUT STICKS

Problem Numbers:

1	2	3	4	5	6	7	8	9	10	11	12
1 A. 4,200 B. \$6.03	A. $\times$ B. $\div$ C. - D. +	<	12 R2	A. 1700 B. 650 C. 800	\$3.47	more	600 - 500 = 100 500 + 500 = 1000	A. 1/2 B. 1/2	4 in.	4:15 pm	18
2 9	A. 51, 56 B. 75, 68	1,042	A	13	115	539	A. 500 B. 5,000	411 miles	9 R5	A	blue
3 A. 570 B. 560	1,800	D	5, 593	27	A. 35 B. 35	B & C	A. 70 - 40 = 30 B. 40 + 20 = 60	5 x 27 = 135	23 students	3/8 1/8 1/2	See below.
4 A. 3 B. 7	\$6 + \$5 = \$11	6	2,653	19 min.	160 100 400	See below.	A. 33 B. 35	55° F	5,808	yes	A
5 2	1,066	87, 93, 21	6	A. 50 B. 40	36	$2 \times 100 + 6 \times 10 + 3 \times 1$	1001, 1010 1,100, 1,110	A. circle B. x C. underline	A. 20 - 30 B. 40 - 50 C. 60 - 70 D. 70 - 80	33	72km
6 1,400	4,000	17	6	Divide into 10 equal parts	6	\$1.27	129	68 cm	10	469	6, 4, 3, 2
7 7 R1	A. 190 B. 180	357	A. 8:20 B. 9:00	\$10.85	A. 600 B. 200	328	\$9.13	13 R3	3 no	77	222 hours
8 9,559	A. 50 - 20 = 30 B. 100 - 60 = 40	24	Three thousand	8,168	B	5	4 R7	4 pennies 2 nickels	558	2, 3, 7	B
9 A, C, D	A. 4:15 B. 4:45	\$13.27	must equal 16	3,060	C	$A \div B = x$	2:30 am	3	867	A. 6,014 B. 5,006 C. 3,003	4 ways
10 1, 2, 3, 4, 5, 6	A. 160 B. 328 C. 2,141	65	no	1995	A. 2 B. 4	A. 8 B. 0	$6 \times 2 = 12$ $2 \times 6 = 12$	square	7	16	See below.
11 7, 1, 2, 22	5 R3	A	1	A. 800 B. 30	10	A. 125¢ B. 500¢	A	A. 5 B. 00	B	48	\$4.00
12 343 + 44	A. 20 B. 100	A. 5,407 B. 2,083	See below.	11 R5	A. 500 + 200 = 700 B. 400 + 400 = 800	55	8	0	18 cm	73	3rd
13 69, 63, 57	A. 1 B. 9 R3 C. 6,560	A	yes	B	See below.	12 in.	179	swim	61	10:00 pm	A. > B. <
14 51 - 11 - 10 = 30	8	6 R2	A. 15 B. 20 C. 10	7.1	C	7	189	12	49	See below.	1095, 1098
15 6 R1	82	1, 836	6	482	A. 63 mi. B. 90 mi.	25, 34, 43, 52 61, 70	360 miles	137	A. 11 B. 22	yes	Denny - 16 Kara - 22
16 A. 806 B. 750	420	101	41.8	A. 2 red squares B. 1 blue square	6 R3	\$1.04	A. more B. 5/8	0	40 min.	Color 2 hundred blocks + 78 small squares	B
17 A. 40¢ B. \$1.00	137, 141	A. 100 B. 300	44	24	A	3,046	2	more	A. 3 B. 4	A. yes B. 4	
18 A	6	A. 101.0 B. 3,035	81, 84, 87, 90	6 R2	yes	See below.	1	A. 12 B. 25	90	5/8	See below.

Lesson 3, #12:   

Lesson 4, #7: A. square, rectangle B. triangle C. square D. triangle

Lesson 9, #12: 1Q, 2D, 1N; 1Q, 1D, 3N, 3D, 4N; 1Q, 5N

Lesson 10, #12: A. 3 1/2 in. B. 4 in. C. Warren D. 1/2 in.

Lesson 12, #4: A. 1 quarter, 2 pennies B. 27 pennies

Lesson 13, #6: A.  or  B. 

Lesson 14, #11: Color in columns in the following way: Gray-4, White-0, Black-5, Green-1

Lesson 18, #7: A. 16 B. 12 C. 26 D. 12 E. no F. yes #12: A. 2/4 = 1/2 mi. B. 3/4 mi. C. 2/4 = 1/2 mi.

Lesson:

3RD GRADE ANSWER KEY