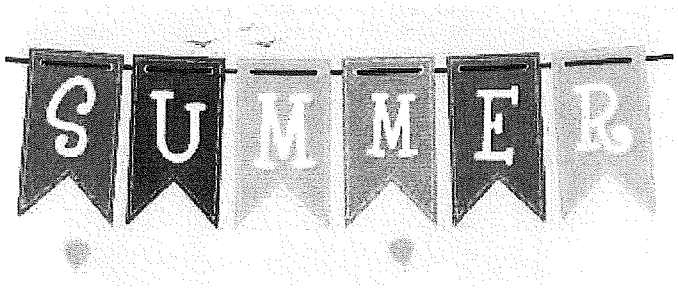
Fairfield Public Schools



Math Packet
ANSWER KEY

For

Students Entering Fourth Grade

Grade 3 Practice Book Answer Keys

ANSWER KEY

Use after Unit One, Session 10

Page 1, Addition & Subtraction Fact Practice

1 4, 6, 8, 10, 12, 14, 16, 18

2 5, 7, 9, 11, 13, 15, 17, 19

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

4 1, 2, 1, 2, 2, 1, 2, 1

5 (challenge) Students' responses will vary. Example: *The answers to all the doubles facts are even. The answers to all the neighbors facts are odd.*

Page 2, Sam's Pet Graph

1 Dogs

2 4 students

3 3 more students chose dogs than cats.

4 5 more students chose cats than birds.

5 a Students' responses will vary. Example: *How many students did Sam survey?*

b Students' responses will vary. Example: *Sam surveyed 23 students.*

Page 3, Numbers in the Hundreds

1 a 147

b 302

c 178

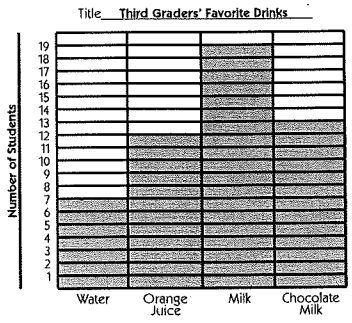
2 a 226, 262, 226 < 262

b 307, 317, 307 < 317

c 894, 849, 894 > 849

Page 4, The Cafeteria Survey

1 Students' work may vary slightly. Example:



2 51 students; students' work will vary.

3 Milk was the most popular drink.

4 a Students' responses will vary. Example: *How many more students voted for milk than water?*

b Students' responses will vary. Example: *12 more students voted for milk.*

Page 5, Fast Tens & Fast Nines Practice

1 12, 13, 14, 15, 16, 17, 18, 19

2 11, 12, 13, 14, 15, 16, 17, 18

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

4 10, 10, 10, 10, 10, 10, 10, 10

5 (challenge) Students' responses will vary. Example: *The answers to both problems go in counting order.*

Page 6, Jorge's Saving Plans

1 4 weeks

2 10 weeks

3 12 weeks

4 (challenge) 7 more weeks after the 7th week; 14 weeks in all.

Page 7, Missing Numbers Fill-In

1 5, 7, 4, 2
10, 1, 3, 6

2 2, 8, 3, 18
5, 6, 4, 14

3 7, 10, 9, 7, 7, 11
8, 9, 9, 3, 14, 5

4 (challenge) Students' responses will vary. Example: *They are all doubles addition facts.*

Page 8, Name the Fraction

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

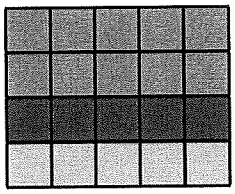
b $\frac{1}{4}$

c $\frac{1}{2}$

d $\frac{1}{4}$

e $\frac{1}{3}$

2 (challenge) $\frac{1}{4}$ of the array is green.



Page 9, Related Addition & Subtraction Facts

1 10, 10, 10, 10, 11, 13, 14

2 11, 12, 12, 13, 14, 13, 12

ANSWER KEY

Use after Unit One, Session 10 (cont.)

Page 9, Related Addition & Subtraction Facts (cont.)

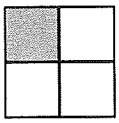
3 5, 7, 5, 5, 8, 6, 6
6, 8, 4, 7, 8, 5, 9

4 (challenge) 300, 390, 610, 900, 810, 700, 700

5 (challenge) 127, 340, 116, 96, 203, 225, 111

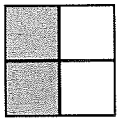
Page 10, Fraction Fill-Ins

1 a One of four regions shaded. Example:

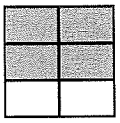


b One of three regions shaded. Example:

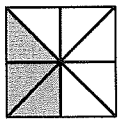
c Two of four regions shaded. Example:



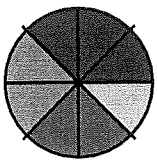
d (challenge) Four of six regions shaded. Example:



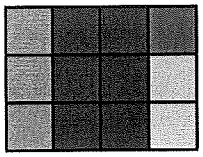
e (challenge) Three of eight regions shaded. Example:



2 (challenge) $^{2}/_{8}$ of the circle is blue. ($^{1}/_{4}$ is also acceptable.) Example:



3 (challenge) $^{2}/_{12}$ of the rectangle is brown. ($^{1}/_{6}$ is also acceptable.) Example:



Use after Unit One, Session 20

Page 11, Dollar Signs & Decimal Points

1 a $0.05
b $0.10
c $0.25

2 a $0.03
b $0.30
c $0.50
d $0.25
e $0.45

3 a (challenge) 1 quarter, 1 dime, 2 nickels, 1 penny
b (challenge) 3 dimes, 3 nickels, 3 pennies

Page 12, Telling Time to the Hour, Half Hour & Quarter Hour

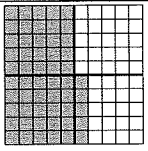
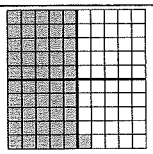
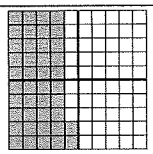
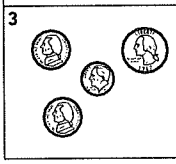
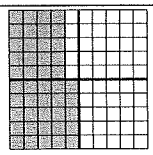
1 a 4:00
b 10:05
c 3:30
d 2:45
e 11:15

2 (challenge) Clock e

3 (challenge) Clock d

4 (challenge) Clock c

Page 13, More Dollar Signs & Decimals

Coin Collection	Value of Collection	Grid
example 	$0.55	
1 	$0.51	
2 	$0.42	
3 	$0.45	

ANSWER KEY

Use after Unit One, Session 20 (cont.)

Page 14, Leaves & Flower Petals

1 15 petals, 5 + 5 + 5 = 15 or 3 × 5 = 15

2 14 leaves, 2 + 2 + 2 + 2 + 2 + 2 + 2 = 14 or 7 × 2 = 14

3 20 petals, 5 + 5 + 5 + 5 = 20 or 4 × 5 = 20

Page 15, Bamboo Shoot Growth Graph

1 11 feet

2 On the 8th day

3 No

4 **a** No

b Students' explanations will vary. Example: *Because the line on the graph goes up a different amount on some of the days. The plant only grew 1 foot between Days 7 and 9, but it grew 2 feet between Days 2 and 4. It grew faster some times, and more slowly other times.*

5 (challenge) It was 12 inches or 1 foot more than 2 yards tall. Students' work will vary.

Page 16, Eyes, Ears & Whiskers

1 20 eyes, 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 = 20 or 10 × 2 = 20

2 12 ears, 2 + 2 + 2 + 2 + 2 + 2 = 12 or 6 × 2 = 12

3 18 whiskers, 6 + 6 + 6 = 18 or 3 × 6 = 18

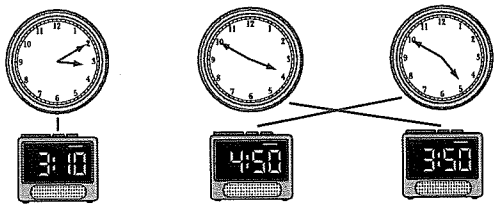
Page 17, Telling Time on Analog & Digital Clocks

1 **a** 1:55

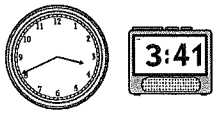
b 9:15

c 7:30

2



3 (challenge) 3:41; Students' work will vary.



Page 18, Eric's Three-Coin Problem

1 Students' responses will vary. Example: *What 3 coins add up to 40¢?*

2 Eric has 3 coins in his pocket. They are worth $0.40. What coins does he have in his pocket?

3 Students' work will vary. A quarter, a dime, and a nickel.

Page 19, Understanding Place Value

1 **a** hundreds, 300

b ones, 4

c tens, 70

d hundreds, 500

2 **a** 96 > 69

b 326 < 362

c 127 < 217

d 960 > 906

e 312 > 231

f 304 < 430

g 719 < 790

3 Students' responses will vary.

Page 20, Alexis Walks Home from School

1 Students' responses will vary. Example: *What time did Alexis get home from school?*

2 Alexis started walking from home from school at 3:15. She got home 20 minutes later. What time did she get home?

3 **a** Students' work will vary.

b 3:35

4 (challenge) 2:20

Use after Unit Two, Session 15

Page 21, Expanded Notation: 3-Digit Numbers

1

	Hundreds	Tens	Ones	Equation
ex	200	40	5	200 + 40 + 5 = 245
a	100	30	7	100 + 30 + 7 = 137
b	200	60	5	200 + 60 + 5 = 265

2 (challenge) Part b, 128. Student work will vary.

ANSWER KEY

Use after Unit Two, Session 15 (cont.)

Page 22, Centimeters & Decimeters

1 a 12 cm
b 7 cm
c 8 cm

2 a Students' responses will vary, 9 cm
b Students' responses will vary, 11 cm
c Students' responses will vary, 8 cm

3 a (challenge) 3 cm
b (challenge) 7 ½ cm

Page 23, Place Value Practice: 3-Digit Numbers

1 a 845
b 508
c 620
d 587
e 914

2 a 400 + 30 + 7
b 500 + 8 or 500 + 0 + 8
c 500 + 40 + 9
d 600 + 90 + 2
e 700 + 40 + 9

3 a 347, 437, 473, 734
b 316, 360, 603, 630
c 109, 119, 190, 191
d (challenge) 6,017; 6,071; 6,107; 6,701

Page 24, Writing Multiplication Equations

1 2, 4, 6, 8, 10, 12; 6 × 2 = 12 ears
2 10, 20, 30, 40, 50, 60, 70, 80; 8 × 10 = 80 cents
3 5, 10, 15, 20, 25, 30, 35; 7 × 5 = 35 arms
4 (challenge) 12, 24, 36, 48, 60; 5 × 12 = 60 eggs

Page 25, Loops & Groups

1 3 × 10 = 30
2 7 × 2 = 14
3 5 × 5 = 25
4 5 × 2 = 10
5 2 × 10 = 20

Page 26, Alfonso's Money Problem

1 Responses will vary. Example: *How much money did Alfonso have after he spent some and got his allowance?*

2 Alfonso had $23. He spent $8 at the store during the day. That night, his dad gave him $5 for his allowance. How much money did Alfonso have at the end of the day?

3 a Students' work will vary.
b $20

4 (challenge) He should give her $5.50. Then they'll each have $14.50.

Page 27, More Related Addition & Subtraction Facts

1 11, 13, 12, 12, 14, 11, 13
17, 13, 14, 12, 16, 14, 18

2 13, 6, 9, 7, 7, 6, 4
9, 6, 3, 7, 8, 4, 9

3 (challenge) 803; 40; 50; 100; 72; 1,000; 6,000
500; 100; 700; 2,000; 18,000; 316; 751

Page 28, Ling's Basketball Cards

1 Students' responses will vary. Example: *How many basketball cards does Ling have now?*

2 Ling had 34 basketball cards. She gave away 18 cards. Then she bought a pack of 6 new cards and her friend gave her 2 more. How many cards does she have now?

3 a Students' work will vary.
b 24 basketball cards

4 (challenge) 6 pages; students' work will vary.

Page 29, Addition & Subtraction Practice

1 13, 12, 13, 11, 15, 14, 12
15, 17, 18, 11, 12, 13, 16

2 9, 9, 8, 8, 5, 8, 8
6, 7, 8, 8, 3, 9, 9

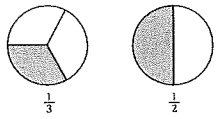
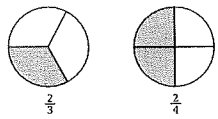
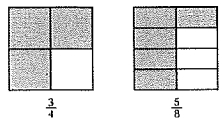
3 (challenge) 400, 3, 997, 300, 360, 598, 2
20, 898, 158, 108, 275, 50, 107

4 (challenge) 205, 500, 208

ANSWER KEY

Use after Unit Two, Session 15 (cont.)

Page 30, Comparing Fractions

Show these fractions.	Compare the fractions with < or >.
1 	$\frac{1}{3} < \frac{1}{2}$
2 	$\frac{2}{3} > \frac{2}{4}$
3 	$\frac{3}{4} > \frac{5}{8}$

Use after Unit Two, Session 30

Page 31, Patterns & Sums

1 **a** 37, 47, 67, 77, 107
b 68, 88, 128, 148, 208
c 94, 184, 214, 304
2 87, 48, 83, 106, 69, 73, 78
3 **a** 87
b 54
c 91
d 111
e (challenge) 317
f (challenge) 738

Page 32, Adding Money Amounts

1 **a** Students' work will vary. $0.73 + $1.65 = $2.38
b Students' work will vary. $1.46 + $0.87 = $2.33
c Students' work will vary. $0.83 + $1.39 = $2.22
2 Students' work will vary. 1 quarter, 1 dime, 2 nickels, and 3 pennies

Page 33, Double-Digit Addition

1 **a** 95
b 77
c 84
d 135
e 152
f 170
2 204 baseball cards; students' work will vary.

Page 34, Telling Time to the Minute

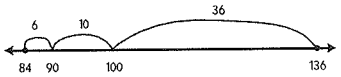
1 **a** 1:47, choice 2
b 8:19, choice 3
2 **a** 4:28
b 11:49
3 Fourth clock, 9:07

Page 35, Number Patterns

1 **a** 60, 75, 120
b 100, 125, 200
c 72, 132, 162,
2 **a** 36, 60, 72, 108, 132
b 39, 65, 78, 117, 143
3 (challenge) 156 and 312. Students' explanations will vary.

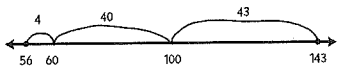
Page 36, Using the Number Line to Find Differences

1 They have 52 more miles to go. Students' work will vary. Example:



6
10
+ 36
52

2 She has 87 pages left to read. Students' work will vary. Example:



4
40
+ 43
87

Page 37, Inches & Feet

1 **a** 4 inches
b 2 inches
c 6 inches
d 5 inches
2 **a** 2 feet
b 3 feet
3 57 inches longer; students' work will vary.
4 (challenge) 45 inches and 39 inches; students' work will vary.

Page 38, Double-Digit Subtraction

1 **a** 39
b 46
c 38
2 **a** Choice 2, The open pack has 17 sheets of paper.
b Mr. Jones needs to borrow 59 more sheets of paper. Students' work will vary.

ANSWER KEY

Use after Unit Two, Session 30 (cont.)

Page 39, Target Practice

1

Target Number	First Number	Circle one number.	Show your work.
a 120	63	78 (58)	63 is almost 60. 58 is almost 60. 60 + 60 = 120
b 150	56	(91) 76	56 is close to 50. You need to add almost 100 more.
c 140	76	89 (68)	76 is close to 70. So is 68. 70 + 70 = 140

2 75, 168, 99, 124, 103, 429, 21

3 (challenge) In the fourth problem, numbers in the hundreds place will vary.

$$\begin{array}{r} 1\,\boxed{2}\,6 \\ -\;\;6\,\boxed{4} \\ \hline 6\;2 \end{array} \qquad \begin{array}{r} 1\;8\,\boxed{2} \\ -\;\;\boxed{7}\;6 \\ \hline 1\;0\;6 \end{array} \qquad \begin{array}{r} \boxed{3}\;2\;5 \\ -\;1\;7\,\boxed{0} \\ \hline 1\,\boxed{5}\;5 \end{array} \qquad \begin{array}{r} \boxed{2}\,\boxed{4}\;6 \\ -\boxed{1}\;3\;8 \\ \hline 1\;0\;8 \end{array}$$

Page 40, Subtraction Problems

1 a Students' work will vary, 81

b 81 + 157 = 238

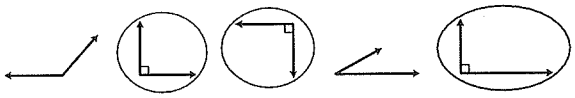
2 a First choice, The snack bar cost 89¢.

b $2.56; students' work will vary.

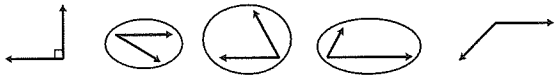
Use after Unit Three, Session 9

Page 41, Right, Acute & Obtuse Angles

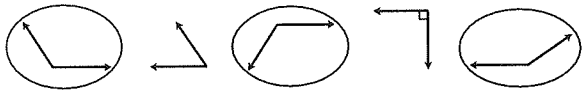
1 a



b



c



2 Students' work will vary.

3 Students' work will vary.

Page 42, Parallel, Intersecting & Perpendicular Lines

1 a Parallel

b Intersecting

c Intersecting and perpendicular

d Parallel

2 Students' work will vary.

3 Students' work will vary.

Page 43, Angles & Sides

1

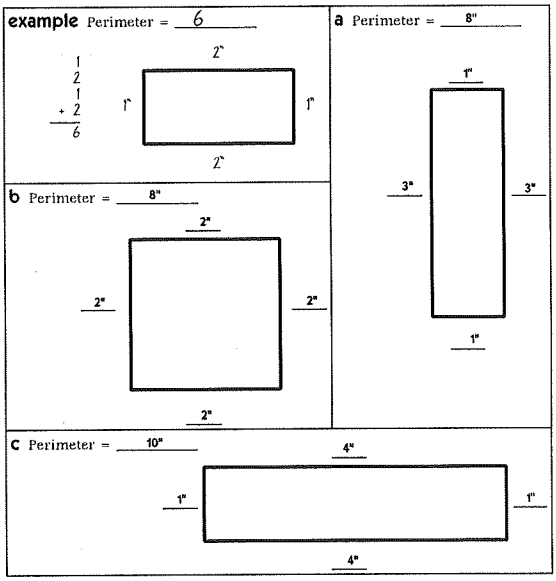
2

3

4

Page 44, Perimeter Practice

1 Students' work will vary.



Page 45, Different Kinds of Quadrilaterals

1 a parallelogram, rectangle

b parallelogram

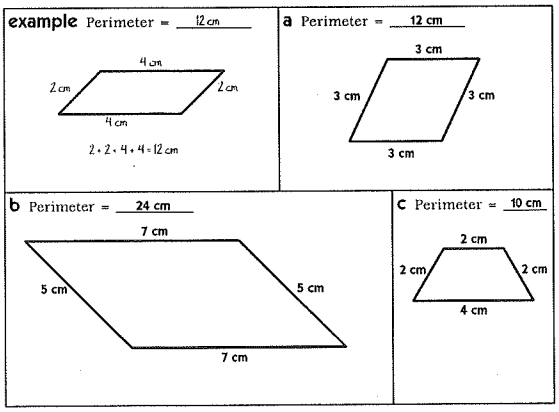
2 She is right. Students' explanations will vary. Example: *This shape has 2 pairs of parallel sides so it's a parallelogram. It also has 4 right angles and 4 sides that are equal, so it's a rectangle, a rhombus, and a square.*

ANSWER KEY

Use after Unit Three, Session 9 (cont.)

Page 46, Finding the Perimeters of Quadrilaterals

1

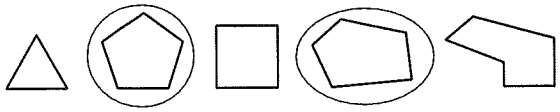


2 **a** Shape a is a rhombus.

b Students' explanations will vary. Example: *It has 4 sides that are all the same length.*

Page 47, Shape Sorting

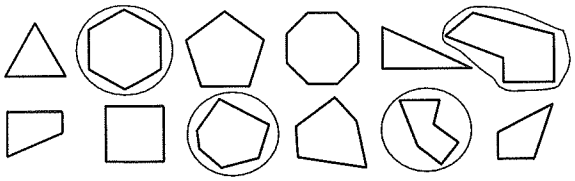
1 **a**



b They have 5 sides.

2 **a** It will have 6 sides.

b



Page 48, More Perimeter Practice

1 **a** 480 meters; students' work will vary.

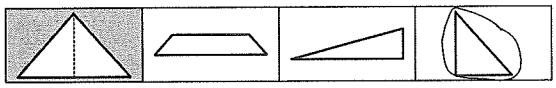
b 280 meters; students' work will vary.

c 180 meters; students' work will vary.

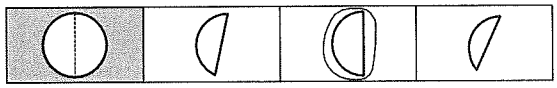
2 (challenge) Students' work will vary. Examples:
Example 1: *a square with side lengths of 5 centimeters.*
Example 2: *a rectangle 6 centimeters long and 4 centimeters wide.*

Page 49, Dividing & Combining Shapes

1



2



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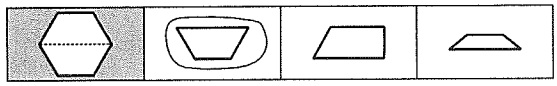

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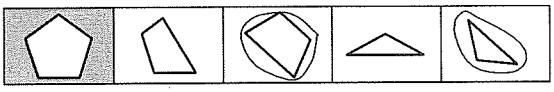

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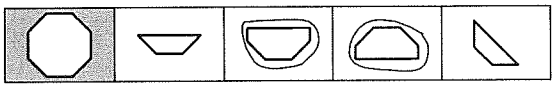


Page 50, Sandbox & Garden Problems

1 **a** Students' sketches will vary.

b 370 inches

2 34 bricks; students' work will vary.

Use after Unit Three, Session 15

Page 51, Adding 2-Digit Numbers

1 **a** 95

b 88

c 81

d 117

e 141

f 110

g 157

h 117

i 162

j 130

k 120

l 178

m 160

2 (challenge)

38	84	29	87
+ 65	+ 59	+ 77	+ 48
103	143	106	135

ANSWER KEY

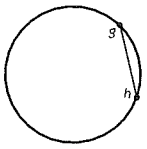
Use after Unit Three, Session 15 (cont.)

Page 52, All About Circles

1 **a** Circumference; Second choice
b Radius; Third choice
c Center; First choice
d Diameter; Fourth choice

2 Diameter

3



Page 53, More Subtraction Problems

1 **a** 121
b 207
c 45
d 233
e 236
f 238

2 Third grade has 3 more students than fourth grade. (There are 53 students in third grade and 50 students in fourth.) Students' work will vary.

Page 54, Perimeters of Different Shapes

1 **a** 340 feet; students' work will vary.
b 300 feet; students' work will vary.

2 (challenge) Students' work will vary.

Page 55, Thinking About Triangles

1 All of the triangles have 1 right angle.

2 **a** Fourth choice, the equilateral triangle
b Each triangle in the group has 3 sides of equal length.

3 All of the triangles have 2 sides that are the same length.

Page 56, Different Types of Triangles

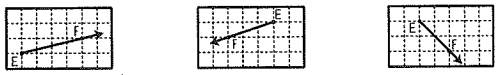
1 **a** Obtuse
b Right
c Acute

2 **a** Isosceles
b Scalene
c Equilateral

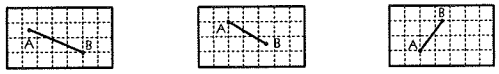
Page 57, Drawing Line Segments, Lines & Rays

1 **a–c**

2 **a–c**



3 **a–c**



Page 58, Drawing Shapes

1 Students' work will vary.

2 Students' work will vary.

3 Students' work will vary.

4 Students' work will vary.

5 (challenge) Five sides; students' explanations will vary.

Page 59, Slides, Turns & Flips

1 **a** Flip. Third choice.
b Slide. First choice.
c Turn. Second choice.
d Flip. Third choice.

Page 60, Garden Patch Problems

1 56 feet of fencing; students' work will vary.

2 Students' work will vary. Dimensions of rectangles with a perimeter of 26 feet are: 1' × 12', 2' × 11', 3' × 10', 4' × 9', 5' × 8', and 6' × 7'.

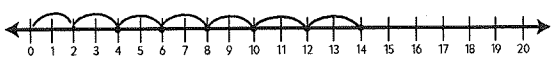
3 (challenge) Students' work will vary.

Use after Unit Four, Session 11

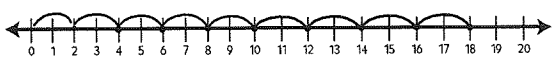
Page 61, Equal Jumps on the Number Line

1 8, 4, 5, 3, 9, 6, 8
4, 20, 10, 14, 12, 18, 16

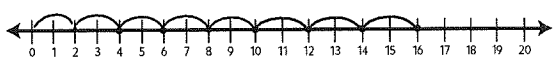
2 **a** 7 × 2 = 14



b 9 × 2 = 18



c 8 × 2 = 16



ANSWER KEY

Use after Unit Four, Session 11 (cont.)

Page 62, Multiplication Story Problems

1 a Students' story problems will vary. Example: *There are 4 airplanes. Each one has 2 wings. How many wings in all?*

b 8

2 a Students' story problems will vary. Example: *There were 7 whales swimming around. They each had 2 flippers. How many flippers in all?*

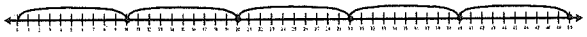
b 14

Page 63, More Equal Jumps on the Number Line

1 7, 3, 8, 8, 10, 20, 70, 80, 60

2 a $10 \times 3 = 30$

b $10 \times 5 = 50$



Page 64, T-Shirts, Erasers & Marbles

1 a $4 \times 12 = ?$; Second choice

b $12 - 4 = ?$; Third choice

c $4 + 12 = ?$; First choice

2 (challenge) 40, 396, 60, 768, 600, 400, 200
420; 210; 3,650; 999; 300; 530; 4,280

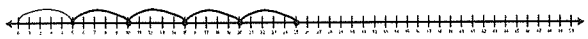
Page 65, Multiplication Practice

1 6, 14, 8, 18, 30, 15, 40, 20, 80

2 a $5 \times 7 = 35$

b $5 \times 9 = 45$

c $5 \times 5 = 25$



Page 66, More Multiplication Story Problems

1 a Students' story problems will vary.

b 20

2 a Students' story problems will vary.

b 40

Page 67, Multiplication & Division Fact Families

1 a $3 \times 10 = 30$

b $9 \times 2 = 18$

c $40 \div 5 = 8$

2 a The missing number is 16.
$2 \times 8 = 16$, $8 \times 2 = 16$, $16 \div 8 = 2$, $16 \div 2 = 8$

b The missing number is 6.
$10 \times 6 = 60$, $6 \times 10 = 60$, $60 \div 6 = 10$, $60 \div 10 = 6$

c The missing number is 4.
$4 \times 5 = 20$, $5 \times 4 = 20$, $20 \div 5 = 4$, $20 \div 4 = 5$

Page 68, Seconds & Minutes

1 18, 24, 36, 48, 60

2 a 60 seconds

b 120 seconds

c 300 seconds

d (challenge) 540 seconds

Page 69, Fact Families & Missing Numbers

1 a $5 \times 6 = 30$, $6 \times 5 = 30$, $30 \div 5 = 6$, $30 \div 6 = 5$

b $5 \times 9 = 45$, $9 \times 5 = 45$, $45 \div 5 = 9$, $45 \div 9 = 5$

2 6, 5, 16, 10, 45, 5
40, 3, 30, 7, 5, 9

3 a (challenge) 28

b (challenge) 185

c (challenge) 21

Page 70, Time in the Garden

1 30 minutes; students' work will vary.

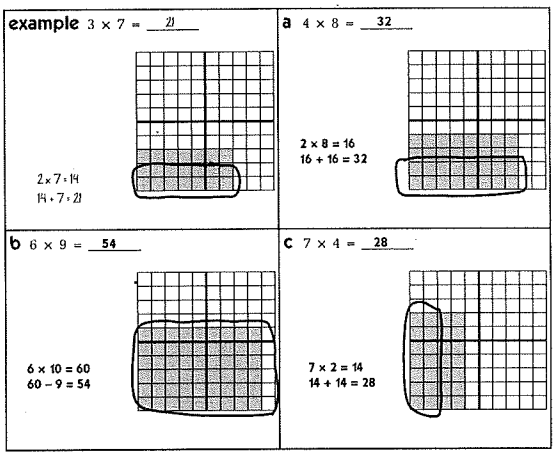
2 $30; students' work will vary.

Use after Unit Four, Session 24

Page 71, Multiplication Arrays

1 12, 9, 24, 16, 18, 24, 36
42, 27, 10, 15, 20, 28, 0

2 Students' sketches will vary. Examples:



Use after Unit Four, Session 24 (cont.)

Page 72, Frank the Frog & Bob the Beetle

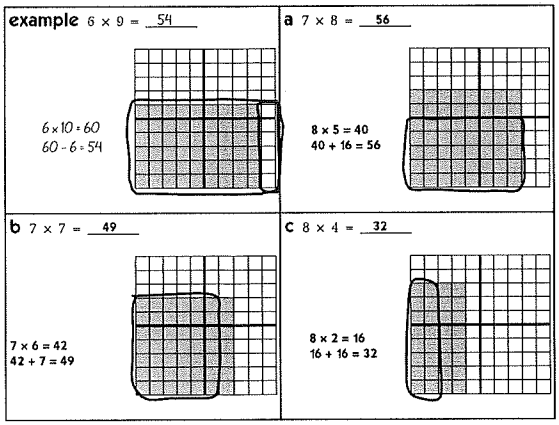
1 **a** He will have to jump 8 times; students' work will vary.
b 32 ÷ 4 = 8

2 **a** 3 minutes; students' work will vary.
b 18 ÷ 6 = 3
c (challenge) 4 ½ minutes; students' work will vary.

Page 73, More Multiplication Arrays

1 42, 24, 36, 81, 28, 27, 21
16, 18, 48, 18, 45, 36, 63

2 Students' sketches will vary. Examples:



Page 74, Flowers & Gifts

1 **a** He can fill 6 jars. Students' work will vary.
b 3 flowers

2 $28.00; students' work will vary.

3 (challenge) $19.92; students' work will vary.

Page 75, Missing Numbers & Fact Families

1 6, 9, 2, 10, 5, 0
12, 7, 20, 21, 3, 5

2 **a** 6 × 7 = 42, 7 × 6 = 42, 42 ÷ 6 = 7, 42 ÷ 7 = 6
b 8 × 7 = 56, 7 × 8 = 56, 56 ÷ 8 = 7, 56 ÷ 7 = 8

Page 76, Cats & Kittens

1 **a** 6 − 2 = ?; Third choice
b 4 kittens

2 **a** 6 ÷ 2 = ?; First choice
b 3 neighbors

3 **a** 6 + 2 = ?; Second choice
b 8 kittens

4 **a** (challenge) Students' responses will vary.
b (challenge) 8

Page 77, More Missing Numbers & Fact Families

1 **a** 6 × 8 = 48, 8 × 6 = 48, 48 ÷ 6 = 8, 48 ÷ 8 = 6
b 8 × 9 = 72, 9 × 8 = 72, 72 ÷ 8 = 9, 72 ÷ 9 = 8

2 6, 3, 8, 10, 35, 4
30, 36, 3, 18, 7, 28
32, 4, 8, 7, 54, 40

Page 78, Family Math Night

1 **a** 56 pattern blocks; students' work will vary.
b Students' explanations will vary.

2 **a** 176 game markers
b Students' explanations will vary.

Page 79, Products & Sums

1 8, 6, 35, 60, 16, 0, 21
14, 30, 15, 4, 9, 30, 36
40, 2, 20, 36, 27, 28, 45

2 **a** 3 and 4
b 1 and 8

Page 80, Andrea, Erica & Joe Go Shopping

1 **a** Students' responses will vary. Example:
Step 1: Add up the prices to see how much they owed at the store. Step 2: Subtract that amount from 40 to see how much money they will have left. Step 3: Divide that amount by 3 to see how much each child gets.
b Each child gets $6.00. Students' work will vary.
c Students' responses will vary.

Use after Unit Five, Session 10

Page 81, Addition & Subtraction Review

1 10, 12, 13, 14, 15, 14, 12
13, 13, 18, 17, 15, 11, 16

2 6, 8, 8, 7, 8, 8, 3
7, 6, 7, 9, 8, 4, 3

3 (challenge) 34, 60, 23, 30, 200, 60, 132
9, 873, 6, 9, 206, 209, 304

Page 82, Grams & Kilograms

1 5,000 grams

2 18,000 grams

3 27,000 grams

4 Half a kilogram

5 700 grams

6 20 baby chicks

ANSWER KEY

Use after Unit Five, Session 10 (cont.)

Page 83, Multiplication Review

1 60, 3, 40, 0, 28, 15, 24
16, 18, 90, 24, 27, 45, 32

2 a 8, 16 ÷ 2 = 8 or 16 ÷ 8 = 2
b 7, 35 ÷ 5 = 7 or 35 ÷ 7 = 5
c 2, 18 ÷ 9 = 2 or 18 ÷ 2 = 9

3 (challenge) 200, 84, 86, 620, 310, 87, 0
48, 140, 70, 126, 156, 690, 96

Page 84, Kilograms & Pounds

1 About 3 kilograms
2 About 14 pounds
3 About 9 kilograms
4 About 75 kilograms
5 a A little less than 3 kilograms. Second choice
b Students' explanations will vary.

Page 85, Rounding to the Nearest Ten

1 a 270
b 260
c 270

2 a 650
b 640
c 650

3 a 130
b 370
c 650
d 280
e 620
f 540

Page 86, Rounding to the Nearest Hundred

1 a 200
b 300
c 300

2 a 600
b 500
c 600

3 a 600
b 400
c 200
d 400
e 800
f 300

Page 87, Rounding to Estimate the Sum

1 a 270 + 320, students' work will vary, 590
b 50 + 820, students' work will vary, 870

2 a No
b No
c No

Page 88, Two Different Addition Methods

1 a 393
b 763
c 823
d 913

Page 89, Round, Estimate & Find the Sum

Numbers to Add	Round and Add	Estimated Sum	Exact Sum (use the algorithm)
1 267 + 338	270 + 340 = 610	The sum will be about 610.	267 + 338 = 605
2 438 + 583	440 + 580 = 1,020	The sum will be about 1,020.	438 + 583 = 1,021
3 842 + 159	840 + 160 = 1,000	The sum will be about 1,000.	842 + 159 = 1,001

Page 90, Reasonable Estimates

1 a Students' estimates will vary; 661, students' work will vary.
b Students' estimates will vary, 895, students' work will vary.
c Students' estimates will vary, 740, students' work will vary.

2 a No
b Yes

Use after Unit Five, Session 20

Page 91, Rounding to the Nearest Ten, Hundred & Thousand

1 a 26 rounds up to 30.
b 182 rounds down to 180.
c 1,208 rounds up to 1,210.

ANSWER KEY

Use after Unit Five, Session 20 (cont.)

Page 91, Rounding to the Nearest Ten, Hundred & Thousand (cont.)

2 **a** 129 rounds down to 100.
b 467 rounds up to 500.
c 253 rounds up to 300.
d 3,348 rounds down to 3,300.

3 **a** 5,702 rounds up to 6,000.
b 4,207 rounds down to 4,000.
c 2,540 rounds up to 3,000
d 8,395 rounds down to 8,000.

4 11, 15, 21, 13, 17, 25, 51

Page 92, Close Estimates

1 **a** Exact sum is 411; students' work will vary.
b Exact sum is 4,555; students' work will vary.
c Exact sum is 6,253; students' work will vary.

2 (challenge)

$$\begin{array}{r} 2\,\boxed{8}\,3 \\ +\,\boxed{4}\,3\,\boxed{6} \\ \hline 7\;1\;9 \end{array} \qquad \begin{array}{r} 4\;1\;7 \\ +\,\boxed{8}\,\boxed{0}\,3 \\ \hline 1\;2\;2\;\boxed{0} \end{array} \qquad \begin{array}{r} 7\,\boxed{3}\,9 \\ +\;3\;6\;1 \\ \hline \boxed{1}\;1\;0\;\boxed{0} \end{array}$$

Page 93, Round & Subtract

1 **a** 610 – 260; students' work will vary; 350
b 730 – 550; students' work will vary; 180

2 **a** 1,500 – 600; students' work will vary; 900
b 2,500 – 900; students' work will vary; 1,600

Page 94, Add to Find the Difference

1 134; Students' work will vary.

2 276; Students' work will vary.

3 452; Students' work will vary.

Page 95, Rounding Review

1 **a** 476 rounds up to 480.
b 2,053 rounds down to 2,050
c 4,388 rounds up to 4,390

2 **a** 328 rounds down to 300.
b 961 rounds up to 1000.
c 4,553 rounds up to 4,600.
d 3,348 rounds down to 3,300.

3 **a** 4,389 rounds down to 4,000.
b 2,503 rounds up to 3,000.
c 1,437 rounds down to 1,000.
d 6,614 rounds up to 7,000.

4 9, 7, 9, 9, 5, 3, 9

Page 96, Estimates & Exact Answers

1 **a** Yes
b No
c No

2 **a** Students' work will vary; 178
b Students' work will vary; 1,182

Page 97, Place Value: Four-Digit Numbers

1 **a** 4,831
b 9,462
c 7,062
d 5,380
e 2,104

2 **a** 2,012
b 8,567
c Six thousand thirty-two
d One thousand five-hundred eighty-three

3 **a** No
b Yes

Page 98, Flora's Book & Greg's TV

1 110 pages; students' work will vary.

2 $918; students' work will vary.

Page 99, Estimate Before You Subtract

Numbers to Subtract	Round and Subtract	Estimated Difference	Exact Difference (use the algorithm)
example 1,357 − 849	1,360 − 850 510	510	1,357 − 849 508
1 643 − 427	640 − 430 210	210	643 − 427 216
2 812 − 364	810 − 360 450	450	812 − 364 448
3 4,302 − 656	4,300 − 660 3,640	3,640	4,302 − 656 3,646

Page 100, Pages & Miles

1 **a** Students' estimates will vary.
b 1,942 pages, students' work will vary.

2 **a** Students' estimates will vary.
b 412 miles, students' work will vary.

ANSWER KEY

Use after Unit Six, Session 10

Page 101, Using the Standard Algorithm to Add & Subtract

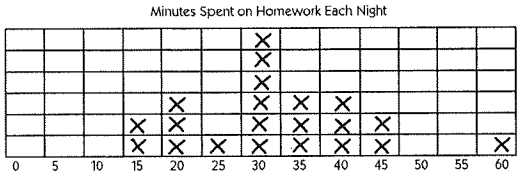
1 a 1,003
b 345
c 724
d 4,372
e 4,092
f 1,341
g 16,273

2 a 363
b 409
c 35
d 2,278
e 716
f 862
g 1,629

3 a (challenge) 8
b (challenge) 4
c (challenge) 3
d (challenge) 9

Page 102, Too Much Homework?

1



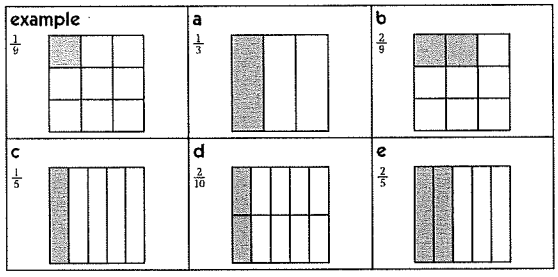
2 Each x stands for 1 student.

3 3 students

4 Students' responses will vary.

Page 103, Fraction Fill & Compare

1



2 a $1/5 < 1/3$
b $1/3 > 2/9$
c $2/10 < 2/9$
d $1/5 = 2/10$
e $2/5 > 2/10$

3 a (challenge) $1/100 < 1/50$
b (challenge) $2/100 = 1/50$
c (challenge) $1/4 > 1/16$

Page 104, The 18¢ Problem

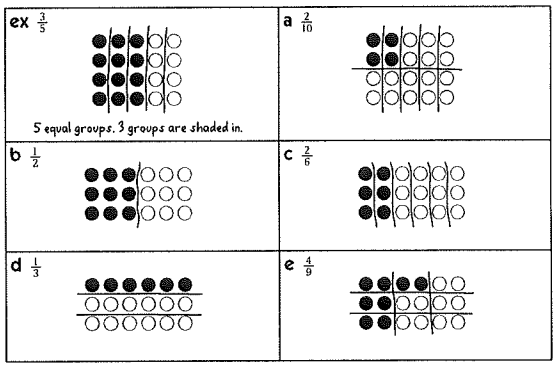
1 a Students' responses may vary, but it makes the best sense to make an organized list.
b Students' responses will vary.
c There are 6 different ways to make 18¢ with dimes, nickels, and pennies. Students' work will vary. Example:

Dimes	Nickels	Pennies
1	1	3
1	0	8
0	3	3
0	2	8
0	1	13
0	0	18

Page 105, Division & Fractions

1 a 4
b 2
c 9
d 6
e 3
f 2

2



3 a $1/3 = 2/6$
b Students' explanations will vary. Example: *Because there are 6 out of 18 circles shaded in for both fractions.*

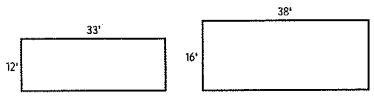
Use after Unit Six, Session 10 (cont.)

Page 106, The Third Graders' Garden Plot

1 **a** Students' responses may vary, but it makes the best sense to draw a picture.

b Students' responses will vary.

c 18 feet; Students' work will vary. Example:



Perimeter of 1st plot: 12' + 12' + 33' + 33' = 90'

Perimeter of 2nd plot: 16' + 16' + 38' + 38' = 108'

108' – 90' = 18'

The perimeter of the 2nd plot is 18' bigger.

Page 107, Addition & Subtraction with the Standard Algorithm

1 **a** 641

b 921

c 1,127

d 3,082

e 4,481

f 7,527

g 13,199

2 **a** 85

b 274

c 875

d 3,783

e 4,658

f 59

g 465

3 **a** (challenge) 6

b (challenge) 6

c (challenge) 8

d (challenge) 3

Page 108, Sandwich Fractions

1 Lola ate more of her sandwich; students' explanations will vary.

2 Bob ate more; students' explanations will vary.

Page 109, More Division & Fractions

1 **a** 4

b 2

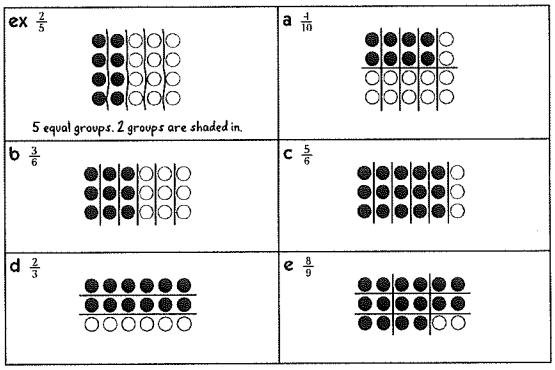
c 9

d 6

e 3

f 2

2



3 $^2/_5$ and $^4/_{10}$

4 **a** $^2/_5 < {}^2/_3$

b $^5/_6 < {}^8/_9$

c $^3/_6 < {}^2/_3$

Page 110, Sophie's Marbles & Ricky's Fish

1 **a** There were more green marbles. Students' explanations will vary.

b There were more blue marbles. Students' explanations will vary.

2 He had more blue fish. Students' explanations will vary.

Use after Unit Six, Session 18

Page 111, True or False?

1 **a** True

b True

c False

d False

e False

2 **a** $400 \div 10 < 400 \div 5$

b $8 \times 2 = 4 \times 4$

c $845 - 208 < 845 - 32$

3 **a** $(5 \times 3) - 2 = ?$; Third choice; 13 packs of baseball cards

b $(84 - 34) \div 2 = ?$; Second choice; 25 fish in each tank

Page 112, Fractions on the Number Line

1 $^2/_{10}$, $^2/_5$, $^6/_{10}$, $^9/_{10}$

2 **a** $^8/_{10}$ should be circled, $^8/_{10} > {}^2/_5$

b $^4/_5$ should be circled, $^4/_5 > {}^4/_{10}$

c $^7/_{10}$ should be circled, $^7/_{10} > {}^3/_5$

d $^9/_{10}$ should be circled, $^9/_{10} > {}^4/_5$

e $\frac{4}{5}$ should be circled, $\frac{4}{5} > \frac{6}{10}$

Use after Unit Six, Session 18 (cont.)

Page 113, Working with Equations

1 **a** 16
b 8
c 0
d 26
e 9
f 41
g 56

2 **a** $32 \times 10 < 13 \times 100$
b $125 + 230 = 100 + 255$
c $144 \div 12 < 144 \div 6$
d $197 + 326 > 284 + 139$
e $300 - 250 = 350 - 300$

3 **a** (challenge) 5
b (challenge) 9
c (challenge) 8
d (challenge) 200
e (challenge) 55
f (challenge) 100

4 **a** (challenge) $(25 \times 4) \div 10 > 81 \div 9$
b (challenge) $(514 - 489) \times 6 = 50 \times 3$
c (challenge) (75×2) 51 $< (100 \div 2) \times 4$
d (challenge) $(328 + 22) - 150 < 500 \div 2$
e (challenge) $(739 + 261) \div 10 = 20 \times 5$
f (challenge) $5 \times 5 \times 5 < (200 \div 2) + 50$

Page 114, Fraction Problems

1 $\frac{3}{10}, \frac{2}{5}, \frac{7}{10}, \frac{4}{5}, \frac{9}{10}$

2 **a** Chris
b Sue
c Lewis

3 **a** $\frac{1}{5} < \frac{4}{5}$
b $\frac{7}{10} < \frac{4}{5}$
c $\frac{3}{5} > \frac{5}{10}$
d $\frac{2}{5} = \frac{4}{10}$
e $\frac{1}{5} < \frac{3}{10}$

4 **a** (challenge) $\frac{1}{10} = \frac{2}{20}$
b (challenge) $\frac{1}{5} = \frac{4}{20}$
c (challenge) $\frac{3}{5} = \frac{12}{20}$

Page 115, Thinking About Fractions

1 Bob, students' explanations will vary.
2 Laura, students' explanations will vary.
3 Steven, students' explanations will vary.
4 (challenge) Jim, students' explanations will vary.

Page 116, Fruit Fractions

1 Zach's family, students' explanations will vary.
2 Shawna, students' explanations will vary.
3 Violet, students' explanations will vary.

Page 117, Pizza Problems

1 $\frac{5}{6}$ of the pizza, students' explanations will vary.
2 $1\frac{1}{2}$ pizzas, students' explanations will vary.
3 **a** (challenge) $\frac{5}{8}$ of the pizza, students' explanations will vary.
b (challenge) $\frac{3}{8}$ of the pizza, students' explanations will vary.

Page 118, Money & Chair Problems

1 $4.11; students' work will vary.
2 **a** 171 chairs; students' work will vary.
b (challenge) 9 rows of chairs (They can make 8 rows of 20 and then put 11 chairs in the last row.) Students' work will vary.

Page 119, Multiplication, Division & Perimeter Practice

1 80, 9, 35, 0, 32, 30, 18
14, 45, 40, 12, 40, 28, 100
2 8, 6, 9
8, 5, 7
3 **a** 440 feet
b 290 feet
4 150 feet

Page 120, Curtains & Movies

1 $10.80; students' work will vary.
2 Rainy Day Dog; students' work will vary.

Use after Unit Seven, Session 20

Page 121, Multiplying & Dividing

1 30, 14, 2, 35, 15, 40, 45
8, 4, 18, 10, 30, 50, 24
0, 8, 6, 28, 36, 80, 27
2 10, 8, 5

6, 3, 10

3 (challenge) 120; 210; 0; 130; 1,946; 1,000; 150

Use after Unit Seven, Session 20 (cont.)

Page 121, Multiplying & Dividing (cont.)

4 **a** (challenge) Even

b (challenge) Students' explanations will vary. Example: *It will be even because if you multiply any number times 10, it will end in a 0. Any number that ends in a 0 is even.*

Page 122, Larger Multiplication

Problem	Break larger numbers into tens and ones. Then multiply.	Add the two products.	Your Answer
1 14 × 4	10 × 4 = 40 ; 4 × 4 = 16	40 + 16 = 56	14 × 4 = 56
2 13 × 6	10 × 6 = 60 ; 3 × 6 = 18	60 + 18 = 78	13 × 6 = 78
3 15 × 7	10 × 7 = 70 ; 5 × 7 = 35	70 + 35 = 105	15 × 7 = 105
4 18 × 8	10 × 8 = 80 ; 8 × 8 = 64	80 + 64 = 144	18 × 8 = 144

Page 123, Operations Review: Add, Subtract, Multiply & Divide

1 15, 12, 40, 45, 6, 100, 24
20, 6, 1, 60, 25, 0, 18
16, 70, 10, 32, 21, 60, 24

2 8, 7, 1
5, 7, 7

3 445; 361; 1,018; 725; 481; 1,100
408; 137; 229; 101; 243; 174

Page 124, Multiplication Story Problems

1 $64; students' work will vary

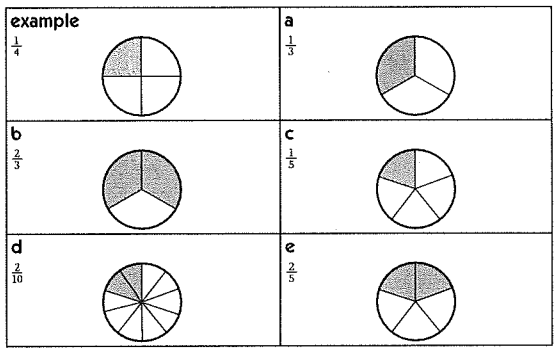
2 70 apples; students' work will vary

3 **a** (challenge) 252 ounces of soda; students' work will vary.

b (challenge) No; students' explanations will vary. Example: *There are 256 ounces in 2 gallons, so Gregory doesn't quite drink 2 gallons a week. His mom is exaggerating.*

Page 125, Fractions of a Circle

1



2 **a** $2/5 < 2/3$

b $2/3 > 2/10$

c $2/10 = 1/5$

d $2/5 > 2/10$

e $1/4 > 2/10$

f (challenge) $1/18 < 1/9$

g (challenge) $2/18 = 1/9$

h (challenge) $1/9 > 2/20$

Page 126, Liters & Quarts

1 **a** About 2 quarts

b There are fewer than 4 liters in a gallon. Students' explanations will vary.

2 1,173; 1052; 9,067; 387; 95; 2,667

3 Frannie. Students' explanations will vary.

Page 127, Lemonade & Bracelets

1 **a** 20 lemons

b Students' explanations will vary.

2 **a** 72 beads

b Students' explanations will vary.

c (challenge) $10.80; students' work will vary.

Page 128, Pencils & Cupcakes

1 **a** There were more purple pencils; students' explanations will vary.

b (challenge) 15 yellow pencils; students' explanations will vary.

2 **a** Red sugar and vanilla icing.

b (challenge) 1/4 or 6 of the cupcakes had no sprinkles or sugar on top. Students' explanations will vary.

ANSWER KEY

Use after Unit Seven, Session 20 (cont.)

Page 129, Shopping Problems (cont.)

1 Serena spent exactly $77 more than Lisa. Students' work will vary.

2 $18.00. Students' work will vary.

Page 130, Feet, Yards & Miles

1 **a** 292 yards; students' work will vary.

b (challenge) 7 full laps or 6 and a tiny bit. (1,760 ÷ 292 = 6.03); students' work will vary.

2 87 feet of fencing; students' work will vary.

Use after Unit Eight, Session 10

Page 131, Expanded Form & Rounding Review

1 **a** 1,000 + 400 + 20 + 7, one thousand four hundred twenty-seven

b 3,251, three thousand two hundred fifty-one

c 7,062; 7,000 + 60 + 2

d 6,000 + 800 + 40 + 5, six thousand eight hundred forty-five

2 **a** 3,430; 3,400; 3,000

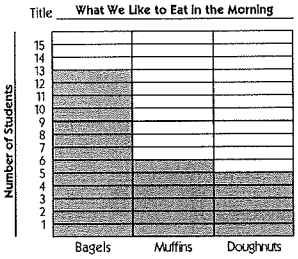
b 8,190; 8,200; 8,000

c 370; 400; 0

d 6,540; 6,500; 7,000

Page 132, Morning Math Games & Breakfast

1 Students' work will vary slightly. Example:



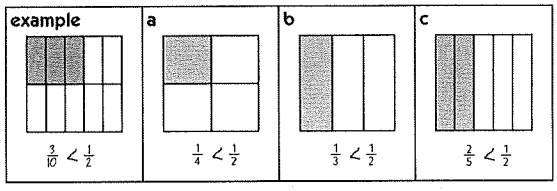
2 Bagels

3 24 students

4 Students' answers will vary. Example:
Ms. Suarez should serve bagels, muffins, and doughnuts. Even though most kids chose bagels, some people like muffins and doughnuts. She should get 26 bagels, 12 muffins, and 10 doughnuts because 20 more people are coming, and they might like the same things as their kids.

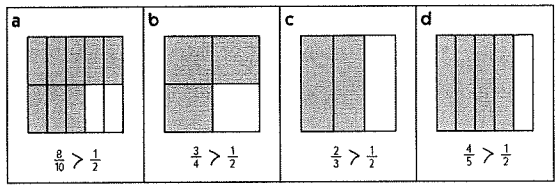
Page 133, Fraction Review

1 Students' responses will vary. Examples:



c Note: $^1/_5 < {}^1/_2$ is also acceptable.

2 Students' responses will vary. Examples:



3 $^1/_4$, $^2/_5$, $^2/_3$, $^9/_{10}$

Page 134, The Soccer Field

1 They ran 80 yards more at Jake's uncle's house. Students' work will vary.

2 (challenge) 6 feet by 12 feet; students' work will vary.

Page 135, Basic Multiplication & Division Review

1 6, 20, 35, 12, 80, 18, 21
0, 30, 14, 15, 45, 25, 24
16, 40, 7, 24, 36, 28, 32

2 2, 9, 2
10, 6, 9

3 (challenge) Yes. Students' explanations will vary. Example: *Since the perimeter of a rectangle is 2 × length and 2 × width, it will be even.*

Page 136, Sandwiches & Mini-Chip Cookies

1 **a** 4 loaves of bread; students' work will vary.

b 4 sandwiches; students' work will vary.

2 4 cookies; students' work will vary. ($4^1/_2$ is also acceptable)

Page 137, Add, Subtract & Multiply

1 519; 1,164; 1,041; 350; 135
142; 436; 538; 138; 225

ANSWER KEY

Use after Unit Eight, Session 10 (cont.)

Page 137, Add, Subtract & Multiply (cont.)

2 **a** $5 \times 8 > 10 \times 3$

b $12 + 18 = 2 + 28$

c $25 - 10 = 35 - 20$

d $2 \times 12 > 2 \times 8$

e $1 \times 9 < 3 \times 4$

f (challenge) $890 - 500 > 756 - 540$

g (challenge) $400 = 150 + 250$

h (challenge) $2 \times 96 < 4 \times 50$

i (challenge) $1 \times 450 = 500 - 50$

3 Third choice $(32 \div 2) + 18 = ?$; Jake has 34 shells

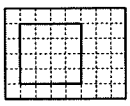
Page 138, Multiplying Two-Digit by One-Digit Numbers

Problem	Break larger numbers into tens and ones. Then multiply.	Add the two products.	Your Answer
ex 16 × 4	10 × 4 = 40; 6 × 4 = 24 Break 16 into 10 and 6. Multiply both by 4	40 + 24 = 64	16 × 4 64
1 13 × 5	10 × 5 = 50; 3 × 5 = 15	50 + 15 = 65	13 × 5 65
2 18 × 3	10 × 3 = 30; 8 × 3 = 24	30 + 24 = 54	18 × 3 54
3 16 × 9	10 × 9 = 90; 6 × 9 = 54	90 + 54 = 144	16 × 9 144
4 14 × 7	10 × 7 = 70; 4 × 7 = 28	70 + 28 = 98	14 × 7 98

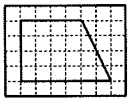
Page 139, Quadrilateral Review

1 Students' responses will vary. Examples:

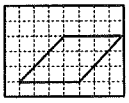
a



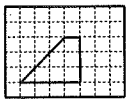
b



c



d



2 No; students' explanations will vary. Example: *A rhombus has to have 4 sides that are all the same length. If all 4 sides are the same length, there has to be 2 pairs of parallel sides, so a rhombus must be a parallelogram.*

Page 140, Angles, Sides & Shapes Review

1 **a** Students' drawings will vary, trapezoid.

b Students' drawings will vary, parallelogram or both rhombus and parallelogram depending on the shape the student has drawn.

c Students' drawings will vary, trapezoid.

2 (challenge) No; students' explanations will vary. Example: *Two of the angles can be obtuse, but then two of them will have to be acute. (The four interior angles of a quadrilateral always add up to exactly 360°. Since 360 ÷ 4 = 90, it is impossible to draw a parallelogram with 4 angles that are all greater than 90°.)*