

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

- 4, 6, 8, 10, 12, 14, 16, 18
- 5, 7, 9, 11, 13, 15, 17, 19
- 2, 3, 4, 5, 6, 7, 8, 9
- 1, 2, 1, 2, 2, 1, 2, 1
- (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

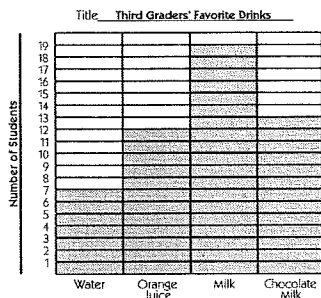
- Dogs
- 4 students
- 3 more students chose dogs than cats.
- 5 more students chose cats than birds.
- Students' responses will vary. Example:
How many students did Sam survey?
 - Students' responses will vary. Example:
Sam surveyed 23 students.

Page 3, Numbers in the Hundreds

- 147
 - 302
 - 178
- 226, 262, 226 < 262
 - 307, 317, 307 < 317
 - 894, 849, 894 > 849

Page 4, The Cafeteria Survey

- Students' work may vary slightly. Example:



- 51 students; students' work will vary.
- Milk was the most popular drink.
- Students' responses will vary. Example:
How many more students voted for milk than water?
 - Students' responses will vary. Example:
12 more students voted for milk.

Page 5, Fast Tens & Fast Nines Practice

- 12, 13, 14, 15, 16, 17, 18, 19
- 11, 12, 13, 14, 15, 16, 17, 18
- 8, 2, 5, 7, 3, 6, 4, 9
- 10, 10, 10, 10, 10, 10, 10, 10
- (challenge) Students' responses will vary. Example:
The answers to both problems go in counting order.

Page 6, Jorge's Saving Plans

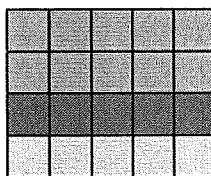
- 4 weeks
- 10 weeks
- 12 weeks
- (challenge) 7 more weeks after the 7th week;
14 weeks in all.

Page 7, Missing Numbers Fill-In

- 5, 7, 4, 2
10, 1, 3, 6
- 2, 8, 3, 18
5, 6, 4, 14
- 7, 10, 9, 7, 7, 11
8, 9, 9, 3, 14, 5
- (challenge) Students' responses will vary. Example:
They are all doubles addition facts.

Page 8, Name the Fraction

- $\frac{1}{3}$
 - $\frac{1}{4}$
 - $\frac{1}{2}$
 - $\frac{1}{4}$
 - $\frac{1}{3}$
- (challenge) $\frac{1}{4}$ of the array is green.



Page 9, Related Addition & Subtraction Facts

- 10, 10, 10, 10, 11, 13, 14
- 11, 12, 12, 13, 14, 13, 12



Use after Unit One, Session 20 (cont.)

Page 14, Leaves & Flower Petals

- 15 petals, $5 + 5 + 5 = 15$ or $3 \times 5 = 15$
- 14 leaves, $2 + 2 + 2 + 2 + 2 + 2 + 2 = 14$ or $7 \times 2 = 14$
- 20 petals, $5 + 5 + 5 + 5 = 20$ or $4 \times 5 = 20$

Page 15, Bamboo Shoot Growth Graph

- 11 feet
- On the 8th day
- No
- 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.
- (challenge) It was 12 inches or 1 foot more than 2 yards tall. Students' work will vary.

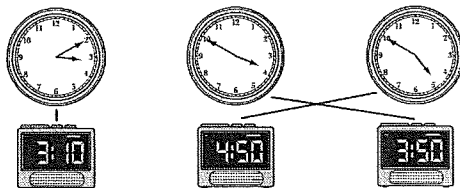
Page 16, Eyes, Ears & Whiskers

- 20 eyes, $2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 = 20$ or $10 \times 2 = 20$
- 12 ears, $2 + 2 + 2 + 2 + 2 + 2 = 12$ or $6 \times 2 = 12$
- 18 whiskers, $6 + 6 + 6 = 18$ or $3 \times 6 = 18$

Page 17, Telling Time on Analog & Digital Clocks

- a 1:55
b 9:15
c 7:30

2



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



Page 18, Eric's Three-Coin Problem

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

- Eric has 3 coins in his pocket. They are worth \$0.40. What coins does he have in his pocket?
- Students' work will vary. A quarter, a dime, and a nickel.

Page 19, Understanding Place Value

- a hundreds, 300
b ones, 4
c tens, 70
d hundreds, 500
- a $96 > 69$
b $326 < 362$
c $127 < 217$
d $960 > 906$
e $312 > 231$
f $304 < 430$
g $719 < 790$
- Students' responses will vary.

Page 20, Alexis Walks Home from School

- Students' responses will vary. Example: *What time did Alexis get home from school?*
- Alexis started walking from home from school at 3:15. She got home 20 minutes later. What time did she get home?
- a Students' work will vary.
b 3:35
- (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 	$200 + 60 + 5 = 265$

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



Use after Unit Two, Session 15 (cont.)

Page 30, Comparing Fractions

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

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

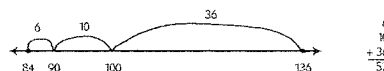
- 1 a 1:47, choice 2
 b 8:19, choice 3
- 2 a 4:28
 b 11:49
- 3 Fourth clock, 9:07

Page 35, Number Patterns

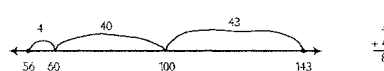
- 1 a 60, 75, 120
 b 100, 125, 200
 c 72, 132, 162,
- 2 a 36, 60, 72, 108, 132
 b 39, 65, 78, 117, 143
- 3 (challenge) 156 and 312. Students' explanations will vary.

Page 36, Using the Number Line to Find Differences

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



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



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.



Use after Unit Three, Session 9 (cont.)

Page 46, Finding the Perimeters of Quadrilaterals

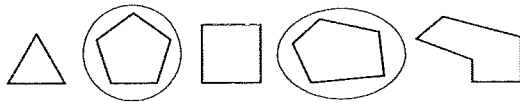
1

<p>example Perimeter = 12 cm</p>	<p>a Perimeter = 12 cm</p>
<p>b Perimeter = 24 cm</p>	<p>c Perimeter = 10 cm</p>

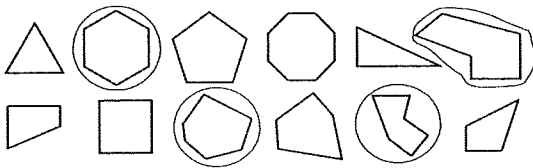
- 2 a Shape *a* is a rhombus.
 b Students' explanations will vary. Example:
It has 4 sides that are all the same length.

Page 47, Shape Sorting

1 a



- b They have 5 sides.
 2 a It will have 6 sides.
 b

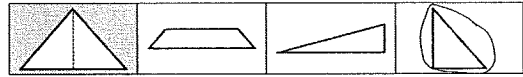


Page 48, More Perimeter Practice

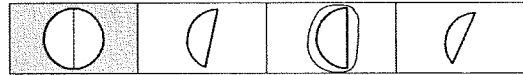
- 1 a 480 meters; students' work will vary.
 b 280 meters; students' work will vary.
 c 180 meters; students' work will vary.
 2 (challenge) Students' work will vary. Examples:
 Example 1: *a square with side lengths of 5 centimeters.*
 Example 2: *a rectangle 6 centimeters long and 4 centimeters wide.*

Page 49, Dividing & Combining Shapes

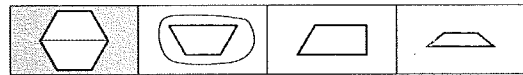
1



2



3



4



5



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)

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



Use after Unit Four, Session 11 (cont.)

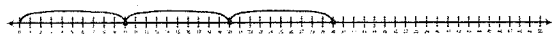
Page 62, Multiplication Story Problems

- 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

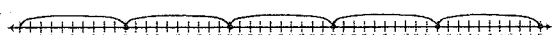
Page 63, More Equal Jumps on the Number Line

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

2 a $10 \times 3 = 30$



b $10 \times 5 = 50$



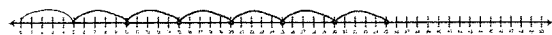
Page 64, T-Shirts, Erasers & Marbles

- 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

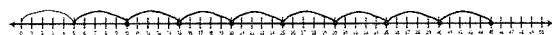
Page 65, Multiplication Practice

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

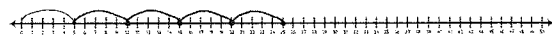
2 a $5 \times 7 = 35$



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:

<p>example $3 \times 7 = \underline{21}$</p> <p>$2 \times 7 = 14$ $14 - 7 = 7$</p>	<p>a $4 \times 8 = \underline{32}$</p> <p>$2 \times 8 = 16$ $16 + 16 = 32$</p>
<p>b $6 \times 9 = \underline{54}$</p> <p>$6 \times 10 = 60$ $60 - 9 = 54$</p>	<p>c $7 \times 4 = \underline{28}$</p> <p>$7 \times 2 = 14$ $14 + 14 = 28$</p>



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 $8, 16 \div 2 = 8$ or $16 \div 8 = 2$
b $7, 35 \div 5 = 7$ or $35 \div 7 = 5$
c $2, 18 \div 9 = 2$ or $18 \div 2 = 9$
- 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)
$\begin{array}{r} 267 \\ + 338 \\ \hline \end{array}$	$\begin{array}{r} 270 \\ + 340 \\ \hline 610 \end{array}$	The sum will be about <u>610</u> .	$\begin{array}{r} 267 \\ + 338 \\ \hline 605 \end{array}$
$\begin{array}{r} 438 \\ + 583 \\ \hline \end{array}$	$\begin{array}{r} 440 \\ + 580 \\ \hline 1,020 \end{array}$	The sum will be about <u>1,020</u> .	$\begin{array}{r} 438 \\ + 583 \\ \hline 1,021 \end{array}$
$\begin{array}{r} 842 \\ + 159 \\ \hline \end{array}$	$\begin{array}{r} 840 \\ + 160 \\ \hline 1,000 \end{array}$	The sum will be about <u>1,000</u> .	$\begin{array}{r} 842 \\ + 159 \\ \hline 1,001 \end{array}$

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.



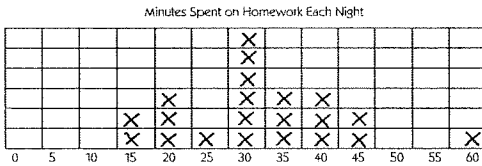
Use after Unit Six, Session 10

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?

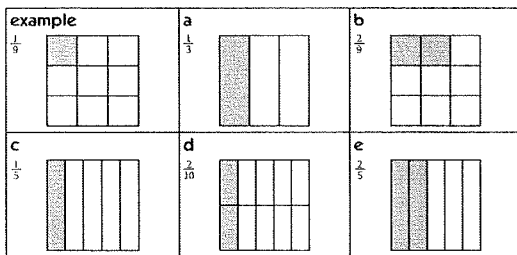
1



- 2 Each x stands for 1 student.
 3 3 students
 4 Students' responses will vary.

Page 103, Fraction Fill & Compare

1



- 2 a $\frac{1}{5} < \frac{1}{3}$
 b $\frac{1}{3} > \frac{2}{9}$
 c $\frac{2}{10} < \frac{2}{9}$
 d $\frac{1}{5} = \frac{2}{10}$
 e $\frac{2}{5} > \frac{2}{10}$
- 3 a (challenge) $\frac{1}{100} < \frac{1}{50}$
 b (challenge) $\frac{2}{100} = \frac{1}{50}$
 c (challenge) $\frac{1}{4} > \frac{1}{16}$

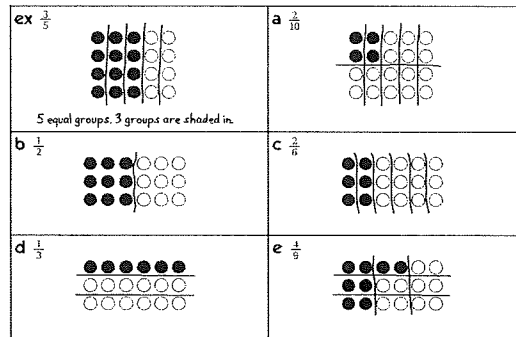
Page 104, The 18¢ Problem

- 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 $\frac{1}{3} = \frac{2}{6}$
 b Students' explanations will vary. Example:
Because there are 6 out of 18 circles shaded in for both fractions.



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

- 16
 - 8
 - 0
 - 26
 - 9
 - 41
 - 56
- $32 \times 10 < 13 \times 100$
 - $125 + 230 = 100 + 255$
 - $144 \div 12 < 144 \div 6$
 - $197 + 326 > 284 + 139$
 - $300 - 250 = 350 - 300$
- (challenge) 5
 - (challenge) 9
 - (challenge) 8
 - (challenge) 200
 - (challenge) 55
 - (challenge) 100
- (challenge) $(25 \times 4) \div 10 > 81 \div 9$
 - (challenge) $(514 - 489) \times 6 = 50 \times 3$
 - (challenge) $(75 \times 2) 51 < (100 \div 2) \times 4$
 - (challenge) $(328 + 22) - 150 < 500 \div 2$
 - (challenge) $(739 + 261) \div 10 = 20 \times 5$
 - (challenge) $5 \times 5 \times 5 < (200 \div 2) + 50$

Page 114, Fraction Problems

- $\frac{3}{10}, \frac{2}{5}, \frac{7}{10}, \frac{4}{5}, \frac{9}{10}$
- Chris
 - Sue
 - Lewis
- $\frac{1}{5} < \frac{4}{5}$
 - $\frac{7}{10} < \frac{1}{5}$
 - $\frac{3}{5} > \frac{5}{10}$
 - $\frac{2}{5} = \frac{4}{10}$
 - $\frac{1}{5} < \frac{3}{10}$
- (challenge) $\frac{1}{10} = \frac{2}{20}$
 - (challenge) $\frac{1}{5} = \frac{4}{20}$
 - (challenge) $\frac{3}{5} = \frac{12}{20}$

Page 115, Thinking About Fractions

- Bob, students' explanations will vary.
- Laura, students' explanations will vary.

- Steven, students' explanations will vary.
- (challenge) Jim, students' explanations will vary.

Page 116, Fruit Fractions

- Zach's family, students' explanations will vary.
- Shawna, students' explanations will vary.
- Violet, students' explanations will vary.

Page 117, Pizza Problems

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

Page 118, Money & Chair Problems

- \$4.11; students' work will vary.
- 171 chairs; students' work will vary.
 - (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

- 80, 9, 35, 0, 32, 30, 18
14, 45, 40, 12, 40, 28, 100
- 8, 6, 9
8, 5, 7
- 440 feet
 - 290 feet
- 150 feet

Page 120, Curtains & Movies

- \$10.80; students' work will vary.
- Rainy Day Dog; students' work will vary.

Use after Unit Seven, Session 20

Page 121, Multiplying & Dividing

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



Use after Unit Seven, Session 20 (cont.)

Page 129, Shopping Problems (cont.)

- Serena spent exactly \$77 more than Lisa. Students' work will vary.
- \$18.00. Students' work will vary.

Page 130, Feet, Yards & Miles

- 292 yards; students' work will vary.
 - (challenge) 7 full laps or 6 and a tiny bit. ($1,760 \div 292 = 6.03$); students' work will vary.
- 87 feet of fencing; students' work will vary.

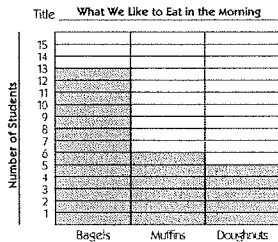
Use after Unit Eight, Session 10

Page 131, Expanded Form & Rounding Review

- 1,000 + 400 + 20 + 7, one thousand four hundred twenty-seven
 - 3,251, three thousand two hundred fifty-one
 - 7,062; $7,000 + 60 + 2$
 - $6,000 + 800 + 40 + 5$, six thousand eight hundred forty-five
- 3,430; 3,400; 3,000
 - 8,190; 8,200; 8,000
 - 370; 400; 0
 - 6,540; 6,500; 7,000

Page 132, Morning Math Games & Breakfast

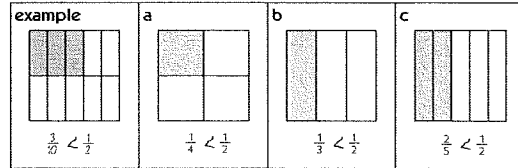
- Students' work will vary slightly. Example:



- Bagels
- 24 students
- 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.

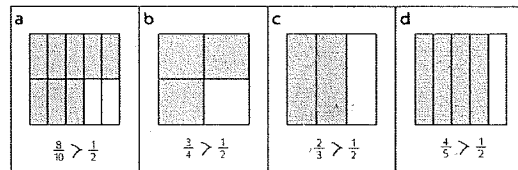
Page 133, Fraction Review

- Students' responses will vary. Examples:



c Note: $1/5 < 1/2$ is also acceptable.

- Students' responses will vary. Examples:



- $1/4, 2/5, 2/3, 9/10$

Page 134, The Soccer Field

- They ran 80 yards more at Jake's uncle's house. Students' work will vary.
- (challenge) 6 feet by 12 feet; students' work will vary.

Page 135, Basic Multiplication & Division Review

- 6, 20, 35, 12, 80, 18, 21
0, 30, 14, 15, 45, 25, 24
16, 40, 7, 24, 36, 28, 32
- 2, 9, 2
10, 6, 9
- (challenge) Yes. Students' explanations will vary. Example: *Since the perimeter of a rectangle is $2 \times$ length and $2 \times$ width, it will be even.*

Page 136, Sandwiches & Mini-Chip Cookies

- 4 loaves of bread; students' work will vary.
 - 4 sandwiches; students' work will vary.
- 4 cookies; students' work will vary. ($4 1/2$ is also acceptable)

Page 137, Add, Subtract & Multiply

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