

The pages in this Practice Book can be assigned in order to provide practice with key skills during each unit of the Bridges in Mathematics curriculum. The pages can also be used with other elementary math curricula. If you are using this Practice Book with another curriculum, use the tables of pages grouped by skill (iii-x) to assign pages based on the skills they address, rather than in order by page number.

## Bridges in Mathematics Grade 4 Practice Book Blacklines

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Bridges in Mathematics is a standards-based K-5 curriculum that provides a unique blend of concept development and skills practice in the context of problem solving. It incorporates the Number Corner, a collection of daily skill-building activities for students.

The Math Learning Center is a nonprofit organization serving the education community. Our mission is to inspire and enable individuals to discover and develop their mathematical confidence and ability. We offer innovative and standards-based professional development, curriculum, materials, and resources to support learning and teaching. To find out more, visit us at WWW.mathlearningcenter.org.

## Practice Books

The student blacklines in this packet are also available as a pre-printed student book.


Bridges Practice Books

| Single Copy | B4PB |
| :--- | :--- |
| Pack of 10 | B4PB10 |

For pricing or to order please call 1800 575-8130.


The MATH LEARNINGCENTER


## Teacher Materials

Introduction ..... i
Practice Pages Grouped by Skill ..... iii
Answer Keys
Unit One ..... xi
Unit Two ..... xiii
Unit Three ..... xvi
Unit Four ..... xix
Unit Five ..... xxii
Unit Six ..... XXV
Unit Seven ..... xxviii
Unit Eight ..... XXX
Unit One: Multiplication \& Division Models
Use anytime after Session 10
Multi-Digit Addition Review ..... 1
Addition Story Problems ..... 2
Multi-Digit Subtraction Review ..... 3
Subtraction Story Problems ..... 4
Add, Subtract \& Multiply ..... 5
Shopping Problems ..... 6
Addition, Subtraction \& Clock Problems ..... 7
Miles, Books \& Jellybeans ..... 8
Round 'Em Up! ..... 9
Centimeters, Decimeters \& Meters ..... 10
Use anytime after Session 21
Multiplication \& Division Facts ..... 11
Sandwiches, Pizza \& Books ..... 12
All in the Family ..... 13
Flowers, Shells \& Cards ..... 14
Multiples \& Multiplication Facts ..... 15
Tasty Treats ..... 16
Arrays \& Factors ..... 17
The Big Race \& the Walk-a-Thon ..... 18
Area \& Perimeter ..... 19
Area \& Perimeter Story Problems ..... 20
Unit Two: Place Value \& Multiplication with Larger Numbers
Use anytime after Session 10
Place Value \& Perimeter ..... 21
Measuring to Find Area \& Perimeter ..... 22
Multiplication \& Division Practice ..... 23
Multiplication \& Division Story Problems ..... 24
Expanded Notation \& Fact Families ..... 25
Money \& Stadium Seats ..... 26
Time after Time ..... 27
Time \& Distance Problems ..... 28
Number Riddles ..... 29
The Arcade \& the Animal Shelter ..... 30
Use anytime after Session 21
Counting Coins \& Bills ..... 31
How Much Change? ..... 32
Multiplying with Money ..... 33
Money \& Miles Per Hour ..... 34
Fill the Frames ..... 35
Apricots \& Carrots ..... 36
Addition \& Multiplication Puzzles ..... 37
Candy \& Video Games ..... 38
Multiplication Puzzles ..... 39
The Information You Need ..... 40
Unit Three: Fractions \& Division
Use anytime after Session 10
Fractions of a Foot ..... 41
More Fractions of a Foot ..... 42
Comparing Fractions on a Number Line ..... 43
Esg Carton Fractions ..... 44
More Egs Carton Fractions ..... 45
Comparing \& Ordering Fractions ..... 46
Fractions \& Mixed Numbers on a Number Line ..... 47
Fraction Story Problems ..... 48
Clock Fractions ..... 49
Time \& Fractions ..... 50
Use anytime after Session 20
Multiplication Tables ..... 51
Fractions \& Division ..... 52
More Multiplication Tables ..... 53
Classroom Groups ..... 54
Fractions of an Hour ..... 55
More Time \& Distance Problems ..... 56
Fractions \& Division Tables ..... 57
Sharing Problems ..... 58
Division Tables \& Equivalent Fractions ..... 59
Packases \& Pizzas ..... 60
Unit Four: Geometry \& Measurement
Use anytime after Session 10
Multiplying by 10, 100 \& 1,000 ..... 61
Money \& Minutes ..... 62
Writing Improper Fractions as Mixed Numbers ..... 63
Area Problems ..... 64
Multiplication \& Division Puzzles ..... 65
Using Partial Products to Solve Multiplication Problems ..... 66
Greater Than \& Less Than ..... 67
Using the Standard Multiplication Algorithm ..... 68
Two Different Multiplication Methods ..... 69
Kylie's Babysitting Money ..... 70
Use anytime after Session 21
More Partial Products ..... 71
Toothpicks \& Leaves ..... 72
Reasonable Estimates \& Partial Products ..... 73
Multiplication Story Problems ..... 74
Multiplication Round \& Check ..... 75
Cherry Tomatoes \& Cafeteria Tables ..... 76
Using the Standard Algorithm \& Partial Products to Multiply ..... 77
Raffle Tickets \& Exercise Minutes ..... 78
Using the Standard Algorithm to Multiply Large Numbers ..... 79
Bread \& Paper ..... 80
Unit Five: Probability \& Data Analysis
Use anytime after Session 10
More Fractions \& Division ..... 81
Favorite Fruit Graph ..... 82
Spinner, Tile \& Marble Fractions ..... 83
Probability Experiments ..... 84
Eating Our Vegetables ..... 85
Fair Spinners ..... 86
Multiplication \& Division Practice ..... 87
Area \& Perimeter, Time \& Money ..... 88
Prizes for Student Helpers ..... 89
Probability Experiments with Tile \& Marbles ..... 90
Use anytime after Session 18
Calendar Problems ..... 91
Dos Bone Graph ..... 92
Division \& Elapsed Time ..... 93
Estimating to Decide if Your Answer Is Reasonable ..... 94
Multi-Digit Multiplication Practice ..... 95
Darryl's Present ..... 96
Enough Information to Solve the Problem? ..... 97
Choosing a Strategy ..... 98
Find the Missing Information ..... 99
Family Math Night ..... 100
Unit Six: Fractions \& Decimals
Use anytime after Session 10
Fractions \& Mixed Numbers ..... 101
Pizza Problems ..... 102
Using Fractions on a Number Line to Solve Problems ..... 103
Time Conversions ..... 104
Showing Fractions in Simplest Form ..... 105
Weight Conversions ..... 106
Simplifying Fractions ..... 107
Capacity Conversions ..... 108
Fraction Practice ..... 109
Length Conversions ..... 110
Use anytime after Session 22
Decimals \& Fractions ..... 111
Running Problems ..... 112
Using Pictures to Compare Decimals \& Fractions ..... 113
From Home to School \& Back ..... 114
Ordering Decimals \& Fractions ..... 115
Pencils \& Paint ..... 116
Rounding Decimals \& Fractions to the Nearest Whole Number ..... 117
Decimal \& Fraction Story Problems ..... 118
Comparing Decimals \& Fractions ..... 119
More Decimal \& Fraction Story Problems ..... 120
Unit Seven: Algebraic Thinking
Use anytime after Session 10
Area Problems ..... 121
Thinking about Area ..... 122
Solving Equations ..... 123
Writing \& Solving Equations ..... 124
What's the Rule? ..... 125
Number Patterns \& Divisibility ..... 126
Ounces, Cups, Pints, Quarts \& Gallons ..... 127
Find or Write the Matching Equation ..... 128
Thinking about Number Patterns ..... 129
The Paper Problem ..... 130
Unit Eight: Wingspans Measurement \& Data Analysis
Use anytime after Session 10
The Vegetable Eating Contest ..... 131
Room 108's Fruit Graph ..... 132
Two Different Kinds of Data ..... 133
How Tall Are We? ..... 134
Estimate or Exact Measurement? ..... 135
Multiplication Review ..... 136
Decimal \& Fraction Riddles ..... 137
Jeff's Wallpaper Problem ..... 138
Multiplication, Area \& Perimeter Review ..... 139
Tiling the Kitchen Floor ..... 140

## 

## Bridges in Mathematics Grade 4 Practice Book Blacklines

There are 140 blacklines in this document, designed to be photocopied to provide fourth grade students with practice in key skill areas, including:

- multi-digit addition and subtraction (computation and word problems)
- multiplication and division facts
- multi-digit multiplication (computation and word problems)
- representing, comparing, and ordering fractions and decimals
- computational estimation
- patterns and equations
- area and perimeter
- elapsed time and money
- graphing and data analysis
- problem solving

This set of blacklines also includes the following materials for the teacher:

- This introduction
- A complete listing of the student pages grouped by skill (see pages iii-x)
- Answer Keys (see pages xi-xxxii)

Note These teacher materials are not included in the bound student version of the Practice Book, which is sold separately.

While the Practice Book pages are not integral to the Bridges Grade 4 program, they may help you better address the needs of some or all of your students, as well as the grade-level expectations in your particular state. The Practice Book pages may be assigned as seatwork or homework after Bridges sessions that don't include Home Connections. These pages may also serve as:

- a source of skill review
- informal paper-and-pencil assessment
- preparation for standardized testing
- differentiated instruction

Every set of 10 pages has been written to follow the instruction in roughly half a Bridges unit. Practice pages 1-10 can be used any time after Unit One, Session 10; pages 11-20 can be used any time after Unit One, Session 21 ; and so on. (There are only 10 pages to accompany Units 7 and 8 because these are shorter units, usually taught toward the end of the school year.) Recommended timings are noted at the top of each page. If you are using this Practice Book with another curriculum, use the lists that follow to assign pages based on the skills they address.

Many odd-numbered pages go naturally with the even-numbered pages that immediately follow them. Often, students will practice a skill on the odd-numbered page and then apply that skill to solve story problems on the following even-numbered page. (See pages 1-4, for example.) In these cases, you may

## Practice Book

## Grade 4 Practice Book Introduction (cont.)

find that it makes good sense to assign the two pages together. Before sending any page home, review it closely and then read over it with your students to address confusion and define unfamiliar terms in advance. Some of the problems on certain pages have been marked with a Challenge icon. These problems may not be appropriate for all the students in your classroom; consider assigning them selectively.

## Grade 4 Practice Book Pages Grouped by Skill

| PLACE VALUE: READING, WRITING, COMPARING, ORDERING \& ROUNDING WHOLE NUMBERS |  |  |
| :--- | :--- | :--- |
| Page Title | Pase Number | Recommended Timing |
| Round 'Em Up! | 9 | Anytime after Bridges Unit 1, Session 10 |
| Place Value \& Perimeter | 21 | Anytime after Bridges Unit 2, Session 10 |
| Expanded Notation \& Fact Families | 25 | Anytime after Bridges Unit 2, Session 10 |
| Number Riddles | 29 | Anytime after Bridges Unit 2, Session 10 |

## MULTI-DIGIT ADDITION \& SUBTRACTION

| Page Title | Page Number | Recommended Timing |
| :--- | :--- | :--- |
| Multi-Digit Addition Review | 1 | Anytime after Bridges Unit 1, Session 10 |
| Multi-Digit Subtraction Review | 3 | Anytime after Bridges Unit 1, Session 10 |
| Add, Subtract \& Multiply | 5 | Anytime after Bridges Unit 1, Session 10 |
| Shopping Problems | 6 | Anytime after Bridges Unit 1, Session 10 |
| Addition, Subtraction \& Clock Problems | 7 | Anytime after Bridges Unit 1, Session 10 |
| Round 'Em Up! | 9 | Anytime after Bridges Unit 1, Session 10 |
| Arrays \& Factors (Challenge Problem) | 17 | Anytime after Bridges Unit 1, Session 21 |
| Addition \& Multiplication Puzzles | 37 | Anytime after Bridges Unit 2, Session 21 |
| Candy \& Video Games | 38 | Anytime after Bridges Unit 2, Session 21 |

## MULTI-DIGIT ADDITION \& SUBTRACTION WORD PROBLEMS

| Page Title | Page Number | Recommended Timing |
| :--- | :--- | :--- |
| Addition Story Problems | 2 | Anytime after Bridges Unit 1, Session 10 |
| Subtraction Story Problems | 4 | Anytime after Bridges Unit 1, Session 10 |
| Miles, Books \& Jellybeans | 8 | Anytime after Bridges Unit 1, Session 10 |
| Sandwiches, Pizza \& Books (Challenge Problem) | 12 | Anytime after Bridges Unit 1, Session 21 |
| Tasty Treats (Challenge Problem) | 16 | Anytime after Bridges Unit 1, Session 21 |
| Money \& Stadium Seats | 26 | Anytime after Bridges Unit 2, Session 10 |
| How Much Change? | 32 | Anytime after Bridges Unit 2, Session 21 |
| The Information You Need | 40 | Anytime after Bridges Unit 2, Session 21 |
| Prizes for Student Helpers | 89 | Anytime after Bridges Unit 5, Session 10 |

FACTORS \& MULTIPLES

| Page Title | Page Number | Recommended Timing |
| :--- | :--- | :--- |
| Multiples \& Multiplication Facts | 15 | Anytime after Bridges Unit 1, Session 21 |
| Arrays \& Factors | 17 | Anytime after Bridges Unit 1, Session 21 |
| More Fractions of a Foot (Problem 3) | 42 | Anytime after Bridges Unit 3, Session 10 |

## Practice Book

## Grade 4 Practice Book Pages Grouped by Skill (cont.)

MULTIPLICATION \& DIVISION FACTS

| Page Title | Page Number | Recommended Timing |
| :--- | :--- | :--- |
| Add, Subtract \& Multiply | 5 | Anytime after Bridges Unit 1, Session 10 |
| Multiplication \& Division Facts | 11 | Anytime after Bridges Unit 1, Session 21 |
| All in the Family | 13 | Anytime after Bridges Unit 1, Session 21 |
| Multiples \& Multiplication Facts | 15 | Anytime after Bridges Unit 1, Session 21 |
| Multiplication \& Division Practice | 23 | Anytime after Bridges Unit 2, Session 10 |
| Expanded Notation \& Fact Families | 25 | Anytime after Bridges Unit 2, Session 10 |
| Multiplication Puzzles | 39 | Anytime after Bridges Unit 2, Session 21 |
| Egs Carton Fractions (Problem 1) | 44 | Anytime after Bridges Unit 3, Session 10 |
| Multiplication Tables | 51 | Anytime after Bridges Unit 3, Session 20 |
| More Multiplication Tables | 53 | Anytime after Bridges Unit 3, Session 20 |
| Fractions \& Division Tables | 57 | Anytime after Bridges Unit 3, Session 20 |
| Division Tables \& Equivalent Fractions | 59 | Anytime after Bridges Unit 3, Session 20 |
| Writing Improper Fractions as Mixed Numbers | 63 | Anytime after Bridges Unit 4, Session 10 |
| Multiplication \& Division Puzzles | 65 | Anytime after Bridges Unit 4, Session 10 |
| More Fractions \& Division | Anytime after Bridges Unit 5, Session 10 |  |
| Multiplication \& Division Practice | Anytime after Bridges Unit 5, Session 10 |  |
| Division \& Elapsed Time | Anytime after Bridges Unit 5, Session 18 |  |
| Multiplication Review | Anytime after Bridges Unit 8, Session 10 |  |
| Multiplication, Area \& Perimeter Review | Anytime after Bridges Unit 8, Session 10 |  |

MULTI-DIGIT MULTIPLICATION \& DIVISION

| Page Title | Page Number | Recommended Timing |
| :--- | :--- | :--- |
| Multiplication \& Division Practice | 23 | Anytime after Bridges Unit 2, Session 10 |
| Multiplying with Money | 33 | Anytime after Bridges Unit 2, Session 21 |
| Fill the Frames | 35 | Anytime after Bridges Unit 2, Session 21 |
| Addition \& Multiplication Puzzles | 37 | Anytime after Bridges Unit 2, Session 21 |
| Multiplication Puzzles | 39 | Anytime after Bridges Unit 2, Session 21 |
| Clock Fractions (Problem 1) | 49 | Anytime after Bridges Unit 3, Session 10 |
| More Multiplication Tables | 53 | Anytime after Bridges Unit 3, Session 20 |
| Multiplying by 10, 100 \& 1,000 | 61 | Anytime after Bridges Unit 4, Session 10 |
| Money \& Minutes | 62 | Anytime after Bridges Unit 4, Session 10 |
| Writing Improper Fractions as Mixed Numbers | 63 | Anytime after Bridges Unit 4, Session 10 |
| Multiplication \& Division Puzzles (Challenge Problem) | Anytime after Bridges Unit 4, Session 10 |  |
| Using Partial Products to Solve Multiplication Problems | Anytime after Bridges Unit 4, Session 10 |  |
| Using the Standard Multiplication Algorithm | 66 | Anytime after Bridges Unit 4, Session 10 |
| Two Different Multiplication Methods | Anytime after Bridges Unit 4, Session 10 |  |
| More Partial Products | 68 | Anytime after Bridges Unit 4, Session 21 |
| Reasonable Estimates \& Partial Products | Anytime after Bridges Unit 4, Session 21 |  |
| Multiplication Round \& Check | 71 | Anytime after Bridges Unit 4, Session 21 |
| Using the Standard Algorithm \& Partial Products to Multiply | Anytime after Bridges Unit 4, Session 21 |  |
| Using the Standard Algorithm to Multiply Large Numbers | 73 | Anytime after Bridges Unit 4, Session 21 |

## Practice Book

Grade 4 Practice Book Pages Grouped by Skill (cont.)

| MULTI-DIGIT MULTIPLICATION \& DIVISION (CONT.) |  |  |
| :--- | :--- | :--- |
| Page Title | Page Number | Recommended Timing |
| Favorite Fruit Graph | 82 | Anytime after Bridges Unit 5, Session 10 |
| Multiplication \& Division Practice | 87 | Anytime after Bridges Unit 5, Session 10 |
| Prizes for Student Helpers | 89 | Anytime after Bridges Unit 5, Session 10 |
| Division \& Elapsed Time | 93 | Anytime after Bridges Unit 5, Session 18 |
| Estimating to Decide if Your Answer Is Reasonable | 94 | Anytime after Bridges Unit 5, Session 18 |
| Multi-Digit Multiplication Practice | 95 | Anytime after Bridges Unit 5, Session 18 |
| Multiplication Review | 136 | Anytime after Bridges Unit 8, Session 10 |

MULTIPLICATION \& DIVISION WORD PROBLEMS

| Page Title | Page Number | Recommended Timing |
| :--- | :--- | :--- |
| Sandwiches, Pizza \& Books | 12 | Anytime after Bridges Unit 1, Session 21 |
| Flowers, Shells \& Cards | 14 | Anytime after Bridges Unit 1, Session 21 |
| Tasty Treats | 16 | Anytime after Bridges Unit 1, Session 21 |
| The Bis Race \& the Walk-a-Thon | 18 | Anytime after Bridges Unit 1, Session 21 |
| Multiplication \& Division Story Problems | 24 | Anytime after Bridges Unit 2, Session 10 |
| Money \& Miles Per Hour | 34 | Anytime after Bridges Unit 2, Session 21 |
| Apricots \& Carrots | 36 | Anytime after Bridges Unit 2, Session 21 |
| Classroom Groups | 54 | Anytime after Bridges Unit 3, Session 20 |
| Sharing Problems | 58 | Anytime after Bridges Unit 3, Session 20 |
| Packages \& Pizzas | 60 | Anytime after Bridges Unit 3, Session 20 |
| Kylie's Babysitting Money | 70 | Anytime after Bridges Unit 4, Session 10 |
| Toothpicks \& Leaves | 72 | Anytime after Bridges Unit 4, Session 21 |
| Multiplication Story Problems | 74 | Anytime after Bridges Unit 4, Session 21 |
| Cherry Tomatoes \& Cafeteria Tables | 76 | Anytime after Bridges Unit 4, Session 21 |
| Raffle Tickets \& Exercise Minutes | Anytime after Bridges Unit 4, Session 21 |  |
| Bread \& Paper | Anytime after Bridges Unit 4, Session 21 |  |
| Estimating to Decide if Your Answer Is Reasonable | Anytime after Bridges Unit 5, Session 18 |  |
| Darryl's Present | Anytime after Bridges Unit 5, Session 18 |  |

## REPRESENTING, COMPARING \& ORDERING FRACTIONS \& DECIMALS

| Page Title | Page Number | Recommended Timing |
| :--- | :--- | :--- |
| Counting Coins \& Bills | 31 | Anytime after Bridges Unit 2, Session 21 |
| Fractions of a Foot | 41 | Anytime after Bridges Unit 3, Session 10 |
| More Fractions of a Foot | 42 | Anytime after Bridges Unit 3, Session 10 |
| Comparing Fractions on a Number Line | 43 | Anytime after Bridges Unit 3, Session 10 |
| Egs Carton Fractions | 44 | Anytime after Bridges Unit 3, Session 10 |
| More Egs Carton Fractions | 45 | Anytime after Bridges Unit 3, Session 10 |
| Comparing \& Ordering Fractions | 46 | Anytime after Bridges Unit 3, Session 10 |
| Fractions \& Mixed Numbers on a Number Line | 47 | Anytime after Bridses Unit 3, Session 10 |
| Clock Fractions | 49 | Anytime after Bridges Unit 3, Session 10 |
| Fractions \& Division | 52 | Anytime after Bridges Unit 3, Session 20 |

## Practice Book

## Grade 4 Practice Book Pages Grouped by Skill (cont.)

REPRESENTING, COMPARING \& ORDERING FRACTIONS \& DECIMALS (CONT.)

| Page Title | Page Number | Recommended Timing |
| :--- | :--- | :--- |
| Fractions of an Hour | 55 | Anytime after Bridges Unit 3, Session 20 |
| Fractions \& Division Tables | 57 | Anytime after Bridges Unit 3, Session 20 |
| Division Tables \& Equivalent Fractions | 59 | Anytime after Bridges Unit 3, Session 20 |
| Writing Improper Fractions as Mixed Numbers | 63 | Anytime after Bridges Unit 4, Session 10 |
| Greater Than \& Less Than | 67 | Anytime after Bridges Unit 4, Session 10 |
| More Fractions \& Division | 81 | Anytime after Bridges Unit 5, Session 10 |
| Spinner, Tile \& Marble Factions | 83 | Anytime after Bridges Unit 5, Session 10 |
| Probability Experiments with Tile \& Marbles | 90 | Anytime after Bridges Unit 5, Session 10 |
| Fractions \& Mixed Numbers | 101 | Anytime after Bridges Unit 6, Session 10 |
| Pizza Problems | 102 | Anytime after Bridges Unit 6, Session 10 |
| Using Fractions on a Number Line to Solve Problems | Anytime after Bridges Unit 6, Session 22 |  |
| Showing Fractions in Simplest Form | 103 | Anytime after Bridges Unit 6, Session 10 |
| Simplifyins Fractions | 105 | Anytime after Bridges Unit 6, Session 10 |
| Fraction Practice | Anytime after Bridges Unit 6, Session 10 |  |
| Decimals \& Fractions | 109 | Anytime after Bridges Unit 6, Session 22 |
| Using Pictures to Compare Decimals \& Fractions | Anytime after Bridges Unit 6, Session 22 |  |
| Ordering Decimals \& Fractions | Anytime after Bridges Unit 6, Session 22 |  |
| Rounding Decimals \& Fractions to the Nearest Whole Number | Anytime after Bridges Unit 6, Session 22 |  |
| Comparins Decimals \& Fractions | Anytime after Bridges Unit 6, Session 22 |  |
| Decimal \& Fraction Riddles | 113 | Anytime after Bridges Unit 8, Session 10 |

ADDING \& SUBTRACTING FRACTIONS \& DECIMALS

| Page Title | Page Number | Recommended Timing |
| :--- | :--- | :--- |
| Add, Subtract \& Multiply | 5 | Anytime after Bridges Unit 1, Session 10 |
| Shopping Problems | 6 | Anytime after Bridges Unit 1, Session 10 |
| How Much Change? | 32 | Anytime after Bridges Unit 2, Session 21 |

## FRACTION \& DECIMAL WORD PROBLEMS

| Page Title | Page Number | Recommended Timing |
| :--- | :--- | :--- |
| Fraction Story Problems | 48 | Anytime after Bridges Unit 3, Session 10 |
| Time \& Fractions | 50 | Anytime after Bridges Unit 3, Session 10 |
| Fractions \& Division | 52 | Anytime after Bridges Unit 3, Session 20 |
| More Time \& Distance Problems | 56 | Anytime after Bridges Unit 3, Session 20 |
| Pizza Problems | 102 | Anytime after Bridges Unit 6, Session 10 |
| Using Fractions on a Number Line to Solve Problems | 103 | Anytime after Bridges Unit 6, Session 10 |
| Fraction Practice | 109 | Anytime after Bridges Unit 6, Session 10 |
| Running Problems | 112 | Anytime after Bridges Unit 6, Session 22 |
| From Home to School \& Back | 114 | Anytime after Bridges Unit 6, Session 22 |
| Decimal \& Fraction Story Problems | 118 | Anytime after Bridges Unit 6, Session 22 |
| More Decimal \& Fraction Story Problems | 120 | Anytime after Bridges Unit 6, Session 22 |

## Practice Book

Grade 4 Practice Book Pages Grouped by Skill (cont.)

COMPUTATIONAL ESTIMATION

| Page Title | Page Number | Recommended Timing |
| :--- | :--- | :--- |
| Reasonable Estimates \& Partial Products | 73 | Anytime after Bridges Unit 4, Session 21 |
| Multiplication Round \& Check | 75 | Anytime after Bridges Unit 4, Session 21 |
| Estimating to Decide if Your Answer Is Reasonable | 94 | Anytime after Bridges Unit 5, Session 18 |
| Darryl's Present | 96 | Anytime after Bridges Unit 5, Session 18 |
| Family Math Night | 100 | Anytime after Bridges Unit 5, Session 18 |
| Estimate or Exact Measurement? | 135 | Anytime after Bridges Unit 8, Session 10 |

PATTERNS \& EQUATIONS

| Page Title | Page Number | Recommended Timing |
| :--- | :--- | :--- |
| Solving Equations | 123 | Anytime after Bridges Unit 7, Session 10 |
| Writing \& Solving Equations | 124 | Anytime after Bridges Unit 7, Session 10 |
| What's the Rule? | 125 | Anytime after Bridges Unit 7, Session 10 |
| Number Patterns \& Divisibility | 126 | Anytime after Bridges Unit 7, Session 10 |
| Find or Write the Matching Equation | 128 | Anytime after Bridges Unit 7, Session 10 |
| Thinking about Number Patterns | 129 | Anytime after Bridges Unit 7, Session 10 |

AREA \& PERIMETER

| Page Title | Page Number | Recommended Timing |
| :--- | :--- | :--- |
| Area \& Perimeter | 19 | Anytime after Bridges Unit 1, Session 21 |
| Area \& Perimeter Story Problems | 20 | Anytime after Bridges Unit 1, Session 21 |
| Place Value \& Perimeter | 21 | Anytime after Bridges Unit 2, Session 10 |
| Measuring to Find Area \& Perimeter | 22 | Anytime after Bridges Unit 2, Session 10 |
| Area Problems | 64 | Anytime after Bridges Unit 4, Session 10 |
| Bread \& Paper | 80 | Anytime after Bridges Unit 4, Session 21 |
| Area \& Perimeter, Time \& Money | 88 | Anytime after Bridges Unit 5, Session 10 |
| Choosing a Strategy | 98 | Anytime after Bridges Unit 5, Session 18 |
| Area Problems | 121 | Anytime after Bridges Unit 7, Session 10 |
| Thinking about Area | 122 | Anytime after Bridges Unit 7, Session 10 |
| The Paper Problem | 130 | Anytime after Bridges Unit 7, Session 10 |
| Jeff's Wallpaper Problem | 138 | Anytime after Bridges Unit 8, Session 10 |
| Multiplication, Area \& Perimeter Review | 139 | Anytime after Bridges Unit 8, Session 10 |
| Tiling the Kitchen Floor | 140 | Anytime after Bridges Unit 8, Session 10 |

## Practice Book

Grade 4 Practice Book Pages Grouped by Skill (cont.)

## MEASUREMENT \& CONVERSIONS (LENGTH, WEIGHT, CAPACITY)

| Page Title | Page Number | Recommended Timing |
| :--- | :--- | :--- |
| Centimeters, Decimeters \& Meters | 10 | Anytime after Bridges Unit 1, Session 10 |
| Measuring to Find Area \& Perimeter | 22 | Anytime after Bridges Unit 2, Session 10 |
| Time \& Distance Problems | 28 | Anytime after Bridges Unit 2, Session 10 |
| Weight Conversions | 106 | Anytime after Bridges Unit 6, Session 10 |
| Capacity Conversions | 108 | Anytime after Bridges Unit 6, Session 10 |
| Length Conversions | 110 | Anytime after Bridges Unit 6, Session 10 |
| Ounces, Cups, Pints, Quarts \& Gallons | 127 | Anytime after Bridges Unit 7, Session 10 |


| MONEY |  |  |
| :--- | :--- | :--- |
| Page Title | Page Number | Recommended Timing |
| Add, Subtract \& Multiply | 5 | Anytime after Bridges Unit 1, Session 10 |
| Shopping Problems | 6 | Anytime after Bridges Unit 1, Session 10 |
| Money \& Stadium Seats | 26 | Anytime after Bridges Unit 2, Session 10 |
| The Arcade \& the Animal Shelter | 30 | Anytime after Bridges Unit 2, Session 10 |
| Counting Coins \& Bills | 31 | Anytime after Bridges Unit 2, Session 21 |
| How Much Change? | 32 | Anytime after Bridges Unit 2, Session 21 |
| Money \& Miles Per Hour | 34 | Anytime after Bridges Unit 2, Session 21 |
| Apricots \& Carrots | 36 | Anytime after Bridges Unit 2, Session 21 |
| The Information You Need | 40 | Anytime after Bridges Unit 2, Session 21 |
| Money \& Minutes | 62 | Anytime after Bridges Unit 4, Session 10 |
| Area \& Perimeter, Time \& Money | 88 | Anytime after Bridges Unit 5, Session 10 |

ELAPSED TIME

| Page Title | Page Number | Recommended Timing |
| :--- | :--- | :--- |
| Addition, Subtraction \& Clock Problems | 7 | Anytime after Bridges Unit 1, Session 10 |
| Time after Time | 27 | Anytime after Bridges Unit 2, Session 10 |
| Time \& Distance Problems | 28 | Anytime after Bridges Unit 2, Session 10 |
| Time \& Fractions | 50 | Anytime after Bridges Unit 3, Session 10 |
| Money \& Minutes | 62 | Anytime after Bridges Unit 4, Session 10 |
| Raffle Tickets \& Exercise Minutes | 78 | Anytime after Bridges Unit 4, Session 21 |
| Calendar Problems | 91 | Anytime after Bridges Unit 5, Session 18 |
| Division \& Elapsed Time | 93 | Anytime after Bridges Unit 5, Session 18 |
| Family Math Night | 100 | Anytime after Bridges Unit 5, Session 18 |
| Time Conversions | 104 | Anytime after Bridges Unit 6, Session 10 |

## Practice Book

Grade 4 Practice Book Pages Grouped by Skill (cont.)

GRAPHING, PROBABILITY \& DATA ANALYSIS

| Page Title | Page Number | Recommended Timing |
| :--- | :--- | :--- |
| Favorite Fruit Graph | 82 | Anytime after Bridges Unit 5, Session 10 |
| Probability Experiments | 84 | Anytime after Bridges Unit 5, Session 10 |
| Eating Our Vegetables | 85 | Anytime after Bridges Unit 5, Session 10 |
| Fair Spinners | 86 | Anytime after Bridges Unit 5, Session 10 |
| Prizes for Student Helpers | 89 | Anytime after Bridges Unit 5, Session 10 |
| Probability Experiments with Tile \& Marbles | 90 | Anytime after Bridges Unit 5, Session 10 |
| Dos Bone Graph | 92 | Anytime after Bridges Unit 5, Session 18 |
| The Vegetable Eating Contest | 131 | Anytime after Bridges Unit 8, Session 10 |
| Room 108's Fruit Graph | 132 | Anytime after Bridges Unit 8, Session 10 |
| Two Different Kinds of Data | 133 | Anytime after Bridges Unit 8, Session 10 |
| How Tall Are We? | 134 | Anytime after Bridges Unit 8, Session 10 |

PROBLEM SOLVING

| Page Title | Page Number | Recommended Timing |
| :---: | :---: | :---: |
| Addition Story Problems | 2 | Anytime after Bridges Unit 1, Session 10 |
| Subtraction Story Problems | 4 | Anytime after Bridges Unit 1, Session 10 |
| Shopping Problems | 6 | Anytime after Bridges Unit 1, Session 10 |
| Addition, Subtraction \& Clock Problems | 7 | Anytime after Bridses Unit 1, Session 10 |
| Miles, Books \& Jellybeans | 8 | Anytime after Bridges Unit 1, Session 10 |
| Centimeters, Decimeters \& Meters | 10 | Anytime after Bridges Unit 1, Session 10 |
| Sandwiches, Pizza \& Books | 12 | Anytime after Bridges Unit 1, Session 21 |
| Flowers, Shells \& Cards | 14 | Anytime after Bridges Unit 1, Session 21 |
| Tasty Treats | 16 | Anytime after Bridges Unit 1, Session 21 |
| The Big Race \& the Walk-a-Thon | 18 | Anytime after Bridges Unit 1, Session 21 |
| Area \& Perimeter Story Problems | 20 | Anytime after Bridges Unit 1, Session 21 |
| Multiplication \& Division Story Problems | 24 | Anytime after Bridses Unit 2, Session 10 |
| Money \& Stadium Seats | 26 | Anytime after Bridges Unit 2, Session 10 |
| Time \& Distance Problems | 28 | Anytime after Bridges Unit 2, Session 10 |
| The Arcade \& the Animal Shelter | 30 | Anytime after Bridges Unit 2, Session 10 |
| How Much Change? | 32 | Anytime after Bridges Unit 2, Session 21 |
| Money \& Miles Per Hour | 34 | Anytime after Bridges Unit 2, Session 21 |
| Apricots \& Carrots | 36 | Anytime after Bridges Unit 2, Session 21 |
| Candy \& Video Games | 38 | Anytime after Bridges Unit 2, Session 21 |
| The Information You Need | 40 | Anytime after Bridges Unit 2, Session 21 |
| Fraction Story Problems | 48 | Anytime after Bridges Unit 3, Session 10 |
| Time \& Fractions | 50 | Anytime after Bridges Unit 3, Session 10 |
| Fractions \& Division | 52 | Anytime after Bridges Unit 3, Session 20 |
| Classroom Groups | 54 | Anytime after Bridges Unit 3, Session 20 |
| More Time \& Distance Problems | 56 | Anytime after Bridges Unit 3, Session 20 |
| Sharing Problems | 58 | Anytime after Bridges Unit 3, Session 20 |
| Packages \& Pizzas | 60 | Anytime after Bridges Unit 3, Session 20 |

## Practice Book

## Grade 4 Practice Book Pages Grouped by Skill (cont.)

PROBLEM SOLVING (CONT.)

| Page Title | Page Number | Recommended Timing |
| :---: | :---: | :---: |
| Money \& Minutes | 62 | Anytime after Bridges Unit 4, Session 10 |
| Two Different Multiplication Methods | 69 | Anytime after Bridges Unit 4, Session 10 |
| Kylie's Babysitting Money | 70 | Anytime after Bridges Unit 4, Session 10 |
| Toothpicks \& Leaves | 72 | Anytime after Bridges Unit 4, Session 21 |
| Multiplication Story Problems | 74 | Anytime after Bridges Unit 4, Session 21 |
| Cherry Tomatoes \& Cafeteria Tables | 76 | Anytime after Bridges Unit 4, Session 21 |
| Raffle Tickets \& Exercise Minutes | 78 | Anytime after Bridges Unit 4, Session 21 |
| Bread \& Paper | 80 | Anytime after Bridges Unit 4, Session 21 |
| Favorite Fruit Graph | 82 | Anytime after Bridges Unit 5, Session 10 |
| Eating Our Vegetables | 85 | Anytime after Bridges Unit 5, Session 10 |
| Area \& Perimeter, Time \& Money | 88 | Anytime after Bridges Unit 5, Session 10 |
| Estimating to Decide if Your Answer Is Reasonable | 94 | Anytime after Bridges Unit 5, Session 18 |
| Darryl's Present | 96 | Anytime after Bridges Unit 5, Session 18 |
| Enough Information to Solve the Problem? | 97 | Anytime after Bridges Unit 5, Session 18 |
| Choosing a Strategy | 98 | Anytime after Bridges Unit 5, Session 18 |
| Find the Missing Information | 99 | Anytime after Bridges Unit 5, Session 18 |
| Family Math Night | 100 | Anytime after Bridges Unit 5, Session 18 |
| Pizza Problems | 102 | Anytime after Bridges Unit 6, Session 10 |
| Time Conversions | 104 | Anytime after Bridges Unit 6, Session 10 |
| Running Problems | 112 | Anytime after Bridges Unit 6, Session 22 |
| From Home to School \& Back | 114 | Anytime after Bridges Unit 6, Session 22 |
| Pencils \& Paint | 116 | Anytime after Bridges Unit 6, Session 22 |
| Decimal \& Fraction Story Problems | 118 | Anytime after Bridges Unit 6, Session 22 |
| More Decimal \& Fraction Story Problems | 120 | Anytime after Bridges Unit 6, Session 22 |
| Thinking about Area | 122 | Anytime after Bridges Unit 7, Session 10 |
| Writing \& Solving Equations | 124 | Anytime after Bridges Unit 7, Session 10 |
| The Paper Problem | 130 | Anytime after Bridges Unit 7, Session 10 |
| Jeff's Wallpaper Problem | 138 | Anytime after Bridges Unit 8, Session 10 |
| Tiling the Kitchen Floor | 140 | Anytime after Bridges Unit 8, Session 10 |

## Grade 4 Practice Book

## ANSWER KEY

## Use after Unit One, Session 10

## Page 1, Multi-Digit Addition Review

1 327; 779; 962; 1,177
829; 1,513; 1,346; 7,818
2 a 1,262
b 1,896
3 (challenge)

## Page 2, Addition Story Problems

1561 pounds of apples
2 3,164 people
3 (challenge) 30,300 feet

## Page 3, Multi-Digit Subtraction Review

1 135; 2,241; 91; 2,381
3,632; 6,192; 188; 2,918
2 a 38
b 7,293
3 a (challenge) $301-34=267$ (This is just one possible solution; there are many.)
b (challenge) 674-352 = 322 (This is just one possible solution; there are many.)
c (challenge) 860-341 = 519

## Page 4, Subtraction Story Problems

152 breakfast sandwiches
2 5,961 bags of potato chips
3 (challenge) 11,916 people were still at the game

## Page 5, Add, Subtract \& Multiply

1 \$3.99; \$27.26; \$50.71; \$15.17
\$2.51; \$1.58; \$47.73; \$1.78
2 a $\$ 7.11$
b $\$ 502.43$
3 24, 20, 27, 14, 0, 6
$24,28,32,0,49,20$
Page 6, Shopping Problems
1 \$5.34
2 \$1.83
3 (challenge) \$41.10

## Page 7, Addition, Subtraction \& Clock Problems

1 972; 904; 7,106; 575
3,918; 697; 2,198; 5,666
2 a 25 minutes
b 20 minutes
c (challenge) 15 minutes

## Page 8, Miles, Books \& Jellybeans

1587 miles
2385 books
3 (challenge) 783 jellybeans

## Page 9, Round 'Em Up!

1 6,814; 1,006; 7,045; 4,275
2 a 50
b 50
C 40
d 90
e 120
f 860
g 270
h 990
i 1,250
j 2,050
3 a 200
b 300
c 800
d 400
e 100
f 200
S 800
h 400
i 700
4 a-e (challenge) Solutions will vary.

## Page 10, Centimeters, Decimeters \& Meters

1 a 280 centimeters
b 28 decimeters
2 a 200
b 20
c 2

## ANSWER KEY

## Use after Unit One, Session 10 (cont.)

Page 10, Centimeters, Decimeters \& Meters (cont.)
3 a (challenge) Sherman crawled 237 cm farther than Sidney.
b (challenge) Explanations will vary.
Example: Sidney was faster because he would have gone 5 meters or 500 cm in an hour.

## Use after Unit One, Session 21

## Page 11, Multiplication \& Division Facts

$124,16,42,30,24,18,0$
$8,36,36,40,15,63,48$
9, 6, 9, 4
$2,6,2,7$
2 18, 20, 35, 32, 64
$2,5,3,5,8$
3 (challenge) Responses will vary. Example: Since 16 is $2 \times 8$, you can multiply the answer to $4 \times 8$ by 2 to get $4 \times 16.4 \times 8=32$ and $32 \times 2=64$, so $4 \times 16=32$.

## Page 12, Sandwiches, Pizza \& Books

1 \$18
24 pieces of pizza
3 (challenge) 12,706 books

## Page 13, All in the Family

1


2 a (challenge)


$$
\begin{aligned}
& 81 \div 9=9 \\
& 9 \div 3=3
\end{aligned}
$$

b (challenge)

$32 \div 8=4$
$4 \times 7=28$

## Page 14, Flowers, Shells \& Cards

124 flowers
26 shells
3 (challenge) 6 bundles

## Page 15, Multiples \& Multiplication Facts

1 a 9, 21
b 12,24
c 27,54
2 a 6, 8, 14, 10 should be circled.
b $8,16,20,28$ should be circled.
c $21,14,42,35$ should be circled.
d $32,48,16,72$ should be circled.
e $21,18,36,12$ should be circled.
3 81, 27, 16, 12, 56
8, 2, 6, 9, 4
(challenge) 12, 24, 48, 96, 192

## Page 16, Tasty Treats

140 milkshakes
2 There are two possible answers:
2 cookies each, with 3 cookies left over OR
$2^{1} / 2$ cookies each
3 (challenge) 197 pounds of vegetables

## ANSWER KEY

## Use after Unit One, Session 21 (cont.)

## Page 17, Arrays \& Factors

1


2 a 1, 2, 4, 8, 16
b 1,17
c $1,2,3,4,6,8,12,24$
d $1,3,9$
e $1,2,3,4,6,9,12,18,36$
3 a 17 should be circled.
b 16,9 , and 36 should have squares around them.
4 a (challenge) $306+398=704$
b (challenge) $623-446=177$

## Page 18, The Big Race \& the Walk-a-Thon

13 hours
230 kilometers
34 groups of 8 , or 8 groups of 4 , or 16 groups of 2 .

## Page 19, Area \& Perimeter

1 a Perimeter: $4+4+4+4=16$ units; Area: $4 \times 4=16$ square units
b Perimeter: $4+4+6+6=20$ units; Area: $4 \times 6=24$ square units
c Perimeter: $3+3+7+7=20$ units; Area: $3 \times 7=21$ square units
2 (challenge) Perimeter $=32$ units Area $=58$ square units
Students' work will vary. Example:


## Page 20, Area \& Perimeter Story Problems

1 a 72 square feet
b 34 feet
2 a 28 square feet
b 22 feet
3 1,500 feet

## Use after Unit Two, Session 10

## Page 21, Place Value \& Perimeter

1 a 9,248
b 17,633
c 32,058
2 a Hundreds, six hundred
b Hundreds, zero
c Ten thousands, forty thousand
3 a 720 inches
b 962 inches
Page 22, Measuring to Find Area \& Perimeter


Page 23, Multiplication \& Division Practice
$121,16,36,25,8,54,12$
8, 4, 2, 8
$6,5,8,6$
2 63, 0, 49, 5, 40
$6,8,8,4,6$

## Use after Unit Two, Session 10 (cont.)

## Page 23, Multiplication \& Division Practice (cont.)

3 40; 400; 4,000; 70; 700; 7,000
800; 50; 6,000; 20; 900; 0
4 (challenge) 100, 8, 10

## Page 24, Multiplication \& Division Story Problems

1700 bags of dried apples
220 miles
3 6,000 footballs
4 (challenge) Students' work will vary. Possible equal groups are:

- 4 groups of 25 seashells
- 5 groups of 20 seashells
- 10 groups of 10 seashells
- 20 groups of 5 seashells
- 25 groups of 4 seashells
- 50 groups of 2 seashells

Page 25, Expanded Notation \& Fact Families
1 a 20,456
b 32,112
C 7,046
d 96,035
e 63,007
f 13,855
g 50,305
2 a 1,000
b 300
c 7,000
d 30
e 400
f 60
g 400
3


Page 26, Money \& Stadium Seats
1 \$65.00
22504 empty seats
3 (challenge) \$1,335.00 more

## Page 27, Time after Time

1 Clock hands should show 7:35.
2 Clock hands should show 9:50.
3 Clock hands should show 5:20.
4 (challenge) Responses will vary. Example: Clock hands that show 4:15 on the first clock and 5:40 on the second clock

## Page 28, Time \& Distance Problems

1 a 1 hour and 10 minutes
b (challenge) 3:55 pm
2 a 1,000 centimeters each hour
b 10 meters
c (challenge) 15 meters; explanations will vary. Example: Half of 10 is 5, so the spider will crawl 5 more meters in 1 and a half hours.

## Page 29, Number Riddles

1


2 a Thirty-three thousand, seventy-two
b Eighty-six thousand, one hundred five
c Seventy-four thousand, six hundred twenty-nine
3 (challenge) Answers will vary. Example: 5,730

## Page 30, The Arcade \& the Animal Shelter

1 a Responses will vary. Example: How much money does Rene have?
b $\quad \$ 2.25$
2 a Responses will vary. Example: How much money did Lin get for the shelter?
b 75 ©

## Use after Unit Two, Session 21

## Page 31, Counting Coins \& Bills

1 a \$0.66
b $\quad \$ 0.50$
c $\$ 0.17$
d $\$ 0.75$
e $\$ 0.61$

## ANSWER KEY

## Use after Unit Two, Session 21 (cont.)

Page 31, Counting Coins \& Bills (cont.)
2 a $\$ 3.47$
b $\quad \$ 1.74$
c $\$ 1.12$
d $\$ 5.85$
e $\$ 3.91$
f (challenge) \$7.97
g (challenge) \$16.45
Page 32, How Much Change?
1 \$3.35
2 \$6.11
3 (challenge) \$4.06

## Page 33, Multiplying with Money

1 a 75; students' work will vary.
b 105; students' work will vary.
2 a (challenge) 310; students' work will vary.
b (challenge) 315; students' work will vary.
Page 34, Money \& Miles Per Hour
1 \$60.00
239 miles
3 (challenge) \$300.00
Page 35, Fill the Frames


## Page 36, Apricots \& Carrots

1 \$1.35
2 \$2.25
3 (challenge) 3 loads of laundry

Page 37, Addition \& Multiplication Puzzles
1 a


2 a


3 a 2
b $\quad 10$
c 8
d 2
e 100

## Page 38, Candy \& Video Games

1 a Responses will vary. Example: How much money did Joya spend in all?
b $\$ 2.24$
2 a Responses will vary. Example: How much money does Devante need?
b $\$ 139.00$
Page 39, Multiplication Puzzles
1


## Use after Unit Two, Session 21 (cont.)

Page 39, Multiplication Puzzles (cont.)
2


3


4 (challenge)


5 (challenge)


## Page 40, The Information You Need

1 Emilio has \$125. He wants to buy a new video game system that tusually costs $\$ 312$ but is on sale for \$289. He wants to borrow money from his brother so that he can buy it while it is on sale. How much money will Emilio need to borrow to buy the game system while it is on sale?
a Responses will vary. Example: How much money does Emilio need to borrow?
b\& c See above.
d $\$ 164.00$
2 Marie had a \$5 bill, three $\$ 1$ bills, 2 quarters, and 3 pennies in her pocket. She bought a bottle of juice for 894 and an apple for 65 C . If she paid with two $\$ 1$ bills, how much change did she get back?
a Responses will vary. Example: How much change did Marie get?
b \& c See above.
d 46 ¢

## Use after Unit Three, Session 10

Page 41, Fractions of a Foot
1 a $1 / 3,2 / 6,4 / 12$

b $1 / 2,3 / 6,6 / 12$


C $1 / 6,{ }^{2} / 12$


$2 \boldsymbol{a}^{4 / 6,2 / 3}$

b $5 / 6$


## ANSWER KEY

## Use after Unit Three, Session 10 (cont.)

Page 41, Fractions of a Foot (cont.)
2 C $2 / 2,3 / 3,4 / 4,6 / 6,12 / 12$

d $4 / 12,1 / 3$

e $8 / 12,4 / 6$


## Page 42, More Fractions of a Foot

1 a 6
b 3
c 2
d 4
2 a $1 / 3$ should be circled (4 inches, 3 inches)
b $2 / 3$ should be circled ( 8 inches, 6 inches)
c $1 / 2$ and $3 / 6$ should be circled (both are 6 inches)
d $3 / 4$ should be circled ( 8 inches, 9 inches)
e $2 / 3$ should be circled ( 3 inches, 8 inches)
3 a 1, 2, 3, 4, 6, 12
b $1,3,5,15$
c $1,2,3,4,6,9,12,18,36$
d $1,2,3,4,5,6,10,12,15,20,30,60$
e (challenge) $1,2,3,4,5,6,8,10,12,15,20,24,30$, 40, 60, 120

Page 43, Comparing Fractions on a Number Line
1 a $2 / 3$ should be circled; $2 / 3>2 / 6$
b $5 / 6$ should be circled; $5 / 6>1 / 3$
2 a $3 / 4$ should be circled; $3 / 4>2 / 3$
b $5 / 6$ should be circled; $5 / 6>2 / 3$
c $5 / 6$ should be circled; $5 / 6>3 / 4$

## Page 44, Egg Carton Fractions

1 6, 4, 3, 2
$18,8,9,10$
$2 \boldsymbol{a}^{2} / 6$
b $1 / 4$
C $1 / 2$
d $5 / 6$
e $3 / 4$
f $4 / 6$
3 a $4 / 6=2 / 3$
b $1 / 3>1 / 4$
C $3 / 4<5 / 6$
d $1 / 3<3 / 4$
e $1 / 2=2 / 4$
f $2 / 3<3 / 4$
g $2 / 6=1 / 3$

## Page 45, More Egg Carton Fractions

1


2


## Page 46, Comparing \& Ordering Fractions

$11 / 4,1 / 3,1 / 2,2 / 3,3 / 4,3 / 2,5 / 3,7 / 4$
$21 / 4,1 / 2,1^{3} / 4,2^{1 / 4}, 3$
3 2/3, 2, 2 $2^{1 / 3}$
4 (challenge) $8 / 9$; explanations will vary. Example:
$3 / 4$ is $1 / 4$ less than $1 .{ }^{8} / 9$ is ${ }^{1 / 9}$ less than $1 .{ }^{1 / 4}$ is more than $1 / 9$, so $3 / 4$ must be less than $8 / 9$.
5 (challenge) 5/4; explanations will vary. Example: $5 / 4$ is the same as $1^{1 / 4}$. ${ }^{10} / 9$ is the same as $1^{1 / g .}$. ${ }^{1 / 4}>1 / 9$, so $5 / 4>10 / 9$.

## Page 47, Fractions \& Mixed Numbers on a Number Line

1 a 3/2
b $1^{2} / 4\left(1^{1} / 2\right.$ is also acceptable)
C $1^{1} / 2$
d $31 / 4$
e $5 / 2$
f $8 / 4$
2 (challenge) ${ }^{1 / 2}$
3 (challenge) $1^{1 / 2} / 2$
4 (challenge) $8^{1 / 2}$

## Use after Unit Three, Session 10 (cont.)

## Page 48, Fraction Story Problems

1 Jim's string is $1 / 4$ of a foot longer than Damien's. Student work will vary. Example:


Jim's string $=3 / 4$ of a foot
Damien's string $=1 / 2$ of a foot
Jim's string is $1 / 4$ of a foot longer than Darien's.

2 Rosa ran further than Jasmine. Student work will vary. Example:


3 (challenge) Darius ate $1 / 4$ more of a pizza than Lisa did. Student work will vary. Example:


## Page 49, Clock Fractions

1 a 30
b 20
c 15
d 10
2 Note: Other shadings are possible.

|  | Fractions | Picture on a Clock | How Many Minutes? |
| :--- | :--- | :--- | :--- |
| a | $\frac{3}{4}$ | 45 | 45 minutes |
| b | $\frac{2}{3}$ |  | 40 minutes |
| c | $\frac{1}{6}$ |  | 10 |
|  |  |  |  |

## Page 50, Time \& Fractions

1 a Mai spent more time doing homework.
(10 more minutes) Students' work will vary.
b 5:15; students' work will vary.
c 5:25; students' work will vary.
2 (challenge) It takes 10 more minutes to get to Ashley's aunt's house.

## Use after Unit Three, Session 20

## Page 51, Multiplication Tables

1 a 15, 6, 27, 9, 24, 18, 21, 12
b $20,8,36,12,32,24,28,16$
c $40,16,72,24,64,48,56,32$
2 8, 9, 4, 4
$8,8,3,3$
3 (challenge) Answers will vary. Example: 376
4 (challenge) Answers will vary. Example: $2 \times 376=752$

## Page 52, Fractions \& Division

1 a $1 / 2$
b $1 / 4$
C $1 / 6$
2 Each friend got $1 / 3$ of the cookie.
3 Each friend got $4 / 3$ or $1^{1 / 3}$ cookies.

## Page 53, More Multiplication Tables

1 32, 30, 49, 48, 36
$7,7,5,7,9$
2 a 50, 20, 90, 30, 80, 60, 70, 40
b $25,10,45,15,40,30,35,20$
c $45,18,81,27,72,54,63,36$
3 (challenge) 120, 60, 108, 180, 90, 162

## Page 54, Classroom Groups

1 Each student got 3 erasers, and there were 2 erasers left over.
2 a 27 students
b (challenge) 9 groups of 3

## Use after Unit Three, Session 20 (cont.)

Page 55, Fractions of an Hour
Note: Other shadings are possible.


Page 56, More Time \& Distance Problems
$1 \frac{1}{4}$ of an hour; 15 minutes
2 (challenge) 9 feet

## Page 57, Fractions \& Divison Tables

1 a $3 / 4<5 / 6$
b $2 / 3=4 / 6$
c $5 / 3>5 / 4$
d $2 / 3<3 / 2$
e $1 / 3<3 / 6$
2 a $9,2,8,3,5,6,4$
b $6,7,5,2,9,4,8$
c $5,4,9,6,7,3,8$

## Page 58, Sharing Problems

1 \$9.50
28 shells each, with 2 shells left over
3 (challenge) 120 blocks

## Page 59, Division Tables \& Equivalent Fractions

1 a 8, 3, 4, 9, 7, 6, 5
b 6, 9, 7, 8, 4, 5, 3
c $9,6,5,8,7,4,3$
2 a $1 / 4,3 / 12$
b $1 / 2,2 / 4,{ }^{3} / 6,6 / 12$
c $3 / 4,9 / 12$
d $5 / 6,10 / 12$
e $1 / 3,2 / 6,4 / 12$

## Page 60, Packages \& Pizza

13 packages of muffins
210 packages of tennis balls (2 balls left)
3 (challenge) $2^{1} / 4$ pizzas

## Use after Unit Four, Session 10

Page 61, Multiplying by 10, 100 \& 1,000
1 50, 70, 400, 900
7,000; 6,000; 90; 5,000; 300
2 80; 40; 700; 500
3,000; 5,000; 1,000; 6
5, 8, 100, 10
(challenge) 1,000,000; 10; 100

## Page 62, Money \& Minutes

1 Brianna earns \$1,000 per month at her job. Sheused to make $\$ 000$ per month. If she works only for the months of June, July, and August, how much money will she make?
a Responses will vary. Example: How much money will Brianna make in 3 months?
b \& c See above.
d \$3,000
2 Jonah is 18 years old. It takes him 50 minutes to ride his bike to work and 50 minutes to ride his bike home every day. If he worked 6 days last week, how many minutes did he spend riding his bike to and from work?
a Responses will vary. Example: How many minutes did Jonah spend riding his bike?
$\mathbf{b} \& \mathbf{c}$ See above.
d 600 minutes
e (challenge) 10 hours
Page 63, Writing Improper Fractions as Mixed Numbers

1 35; 350; 350, 3,500
12; 120; 120; 1,200
56; 560; 560, 5,600
$21,1^{1 / 3}, 1^{2} / 3$
1, $1,1^{6 / 12}$ ( $1^{1 / 2}$ also acceptable)
$1,2,1^{2} / 6,\left(1^{1 / 3}\right.$ acceptable), $1^{3 / 6}\left(1^{1 / 2}\right.$ acceptable)
(challenge) $1^{1 / 4}, 2,3^{3} / 4,9$

## Use after Unit Four, Session 10 (cont.)

Page 64, Area Problems
1 2,400 square inches
2 4,000 square feet
3 (challenge) 6,100 square inches
Page 65, Multiplication \& Division Puzzles
$16,3,9,8,5$
$2,5,4,6,9$
2 a $81 \div 9=9$
$9 \times 4=3$
$36 \div 6=6$
$6 \times 7=42$

end
b $1 \times 2=2$
$2 \times 9=18$
$18 \div 3=6$
$6 \div 3=2$


3 (challenge) 10, 4, 2, 3, 9, 90, 30, 20
Page 66, Using Partial Products to Solve Multiplication Problems


Page 67, Greater Than \& Less Than


Page 68, Using the Standard Multiplication Algorithm
1 a 258
b 112
c 236
d 111
e 252
f 264
g 340
2 a 411
b 2,674
c 2,910
d 584
e 1,392
f 715
g 2,030
h (challenge) 6,215
i (challenge) 14,124
j (challenge) 17,300
k (challenge) 31,302
Page 69, Two Different Multiplication Methods
1 a 224
b 235
c 168
d 2,247

## ANSWER KEY

## Use after Unit Four, Session 10 (cont.)

## Page 69, Two Different Multiplication Methods (cont.)

1 e 2,892
f 777
2 Ramon bought 8 big cases of breakfast cereal. Each case held 12 boxes of cereal. Each box of cereat held 180 zz . of cereat. How many boxes of breakfast cereal did Ramon buy?
a Responses will vary. Example: How many boxes of cereal did Ramon get?
b \& c See above.
d 96 boxes of cereal

## Page 70, Kylie's Babysitting Money

1 Kylie earns \$8 an hour babysitting. She babysat 21 hours last month. This month, she babysat 17 hours more than last month. How much more money did she earn this month?
a Responses will vary. Example: How much more money did Kylie earn this month than she did last month?
b \& c See above.
d $\$ 136$
2 (challenge) 32 hours; student work will vary.

## Use after Unit Four, Session 21

## Page 71, More Partial Products



## Page 72, Toothpicks \& Leaves

1 Last year, there were 26 students in Mrs. Cole= man's class. This year, there are 28 students in her class. They are doing an art project, and every student needs 17 toothpicks. How many toothpicks will they need altogether?
a Responses will vary. Example: How many toothpicks do the kids need for the project?
$\mathbf{b} \& \mathbf{c}$ See above.
d 476 toothpicks
2 Leo is 11 years old. His neighbors pay him \$12 to rake the leaves in their yards. He raked 23 yards in October and 15 yards in November. How much money did he earn in those two months?
a Responses will vary. Example: How much money did Leo earn in 2 months?
b \& c See above.
d $\$ 456$
Page 73, Reasonable Estimates \& Partial Products
1 a 400 (first bubble)
b 600 (first bubble)
c 6,000 (third bubble)
d 3,000 (third bubble)
2 a 1,242
b 1,548
c 1,943
d 2,183
e 2,632
Page 74, Multiplication Story Problems
1728 desks
2 1,750 sit-ups
3 (challenge) 672 seats

## Page 75, Multiplication Round \& Check

1 200; 300; 600; 400; 500; 2,000; 3,000; 6,000
2 a Estimate: 400; Solution: 369
b Estimate: 300; Solution: 288
c Estimate: 200; Solution: 216
d Estimate: 600; Solution: 504
e Estimate: 600; Solution: 726
f Estimate: 2,000; Solution: 1,854
g (challenge) Estimate: 3,600; Solution: 3,936

## Use after Unit Four, Session 21 (cont.)

## Page 76, Cherry Tomatoes \& Cafeteria Tables

1 Farmer Sara drives 32 miles each week to take baskets of vegetables to her customers. She put 16 cherry tomatoes into each basket. She filled 23 baskets. How many cherry tomatoes did she use altogether?
a Responses will vary. Example: How many cherry tomatoes did it take to fill all the baskets?
b\&c See above.
d 368 cherry tomatoes
2 There are 24 tables in the cafeteria, and each table seats 17 students. The eafeteria serves lunch from 11.45 am until $12: 25$ pm. How many students can sit in the cafeteria at a time?
a Responses will vary. Example: How many kids can sit in the cafeteria at the same time?
b\& c See above.
d 408 students
Page 77, Using the Standard Algorithm \& Partial Products to Multiply
1 900; 1,200; 1,600; 4,000; 6,000; 8,000
2 a 1,044
b 1,634
c 4,092
d 7,245

## Page 78, Raffle Tickets \& Exercise Minutes

1 The middle school was giving away raffle tickets at Back to School Night. There were 48 classrooms altogether and 896 students at the sehoot. Each classroom got a bundle of 108 tickets to give away. How many tickets did the classrooms get altogether?
a Responses will vary. Example: How many tickets were there to give away in all?
b\& c See above.
d 5,184 tickets
2 Deja exercises four days a week at the gym. The Sym is 7 blocks away from her house. Each time, she spends 45 minutes exercising. If she does this for 13 weeks, how much time will she spend exercising altogether?
a Responses will vary. Example: How many minutes will Deja spend exercising in 13 weeks?
b \& c See above.
d 2,340 minutes
e (challenge) 39 hours and 0 minutes

## Page 79, Using the Standard Algorithm to Multiply Large Numbers

1 4,800; 5,600; 6,400; 6,000; 12,000; 18,000
2 a 5,928
b 5,760
c 4,602
d 7,631
e 15,652

## Page 80, Bread \& Paper

1480 loaves of bread
2 a (challenge) $12^{\prime \prime} \times 8^{\prime \prime}$ or $4^{\prime \prime} \times 24^{\prime \prime}$
b (challenge) 96 square inches

## Use after Unit Five, Session 10

Page 81, More Fractions \& Division
1 a $1 / 4$
b $3 / 4$
c $1 / 8$
d $3 / 8$
e $5 / 8$
f $1 / 3$
$\boldsymbol{S}^{2 / 3}$
2 12, 6, 3, 8 120, 60, 30, 80
3 a 8
b 3
c 6
d 80
e 120
f 30
g 60
h (challenge) 18
i (challenge) 160

## Page 82, Favorite Fruit Graph

1 Watermelon
2 Peaches
3 Apples and strawberries
4120 students
560 students
630 students

## ANSWER KEY

## Use after Unit Five, Session 10 (cont.)

## Page 83, Spinner, Tile \& Marble Fractions

1 a 1/2
b $1 / 4$
C $1 / 3$
d $1 / 8$
2 a $2 / 8$ ( $1 / 4$ acceptable also $)$
b 2/6 ( ${ }^{1 / 3}$ acceptable also)
c $3 / 6(1 / 2$ acceptable also $)$
d $6 / 8$ ( $3 / 4$ acceptable also)
3 a 3/9 ( $1 / 3$ acceptable also)
b $1 / 6$
C $3 / 10$

## Page 84, Probability Experiments

$12 / 8$ or $1 / 4$ (Other acceptable answers include: 2 out of 8 chances, 1 out of 4 chances.)
2 Chris has a better chance of getting a gray tile from the large bowl than the small bowl. Explanations will vary. Example: Half the tiles in the large bowl of 240 are gray because 120 is half of 240 . Only $2 / 8$ or $1 / 4$ of the tiles in the small bowl are gray. So his chances are only 2 out of 8 , which is less than 1 out of 2 .

3 2/10 or $1 / 5$ (Other acceptable answers include: 2 out of 10 chances, 1 out of 5 chances.)
4 a (challenge) 4 would need to be black. Explanations will vary. Example: 20 is twice as much as 10. If you want the chances to stay the same, you have to double the number of black marbles $2 \times 2=4$.
b (challenge) 20 would need to be black. Explanations will vary. Example: 2 is $1 / 5$ of 10. 20 is $1 / 5$ of 100. The chances have to be 2 out of 10 , or $1 / 5$.

## Page 85, Eating Our Vegetables

1 a 2 students
b 16 students
c 13 students
d Tuesday, Wednesday, and Friday
e (challenge) Friday; explanations will vary Example: ${ }^{1 / 3}$ of 24 is 8 , so $2 / 3$ of 24 would be 16 Sixteen kids ate vegetables on Friday.

2100 students; explanations will vary. Example:
$1 / 4+1 / 3=7 / 12$
$12 / 12-7 / 12=5 / 12$
$240 \div 12=20$
$20 \times 5=100$

## Page 86, Fair Spinners

1 a Choice 3, the half and half spinner
b Yes; explanations will vary. Example: 4 parts of the spinner are labeled $A$ and 4 parts are labeled B. The parts are the same size, so it's fair.
2 a Responses will vary. Example: If you split the spinner into 3 equal parts, each boy has an equal chance.


2 b Responses will vary. Example: Split the spinner into 6 equal parts, and give each color 2 parts. That way, each boy has a 2 out of 6 chance of landing on his color.


## Page 87, Multiplication \& Division Practice

1 a 4,760
b 11,661
c 9,248
d 11,392
e 17,347
f 11,175
825,929
2 8, 9, 8
7, 8, 7
8, 3, 6
3 (challenge) 27, 14, 16
Page 88, Area \& Perimeter, Time \& Money
1 Area $=2,800$ square inches
Perimeter $=240$ inches
2 a 10 hours
b $\$ 120$

## Use after Unit Five, Session 10 (cont.)

## Page 89, Prizes for Student Helpers

1


2 a $\$ 24.95$
b $\$ 40.00$
c $\$ 6.50$
d $\$ 1.25$
3 \$72.70; students' work will vary.

## Page 90, Probability Experiments with Tile \& Marbles

$1 \mathbf{a}^{4 / 8}$ (Other acceptable responses include $1 / 2,1$ out of 2 , half, 4 out of 8. )
b 120; explanations will vary. Example: 4 out of 8 is half, so to keep the probability the same, half the tiles have to be white. Half of 240 is 120.
2

| Problem | Color in the Marbles | Number of Black Marbles |
| :---: | :---: | :---: |
| a Ling wants to make a collection of marbles where the chance of pulling out a black marble is $\frac{1}{3}$. Color in some of the 36 marbles to show how many should be black. | $\begin{aligned} & 000000000 \\ & 000000000 \\ & 000000000 \\ & 000000000 \end{aligned}$ | 12 |
| b Ling wants to change the collection of marbles so that it is twice as likely as it was with the collection above that she will pull out a black marble. Color in some of the 36 marbles to show how many should be black. |  | 24 |
| C Ling wants to change the first collection of marbles so that the chances of pulling out a black marble are half what they were with the first collection. Color in some of the 36 marbles to show how many should be black. | $\begin{aligned} & 000000000 \\ & 000000000 \\ & 000000000 \\ & 000000000 \end{aligned}$ | 6 |

## Use after Unit Five, Session 18

## Page 91, Calendar Problems

1 Answers and explanations will vary. Example: No. If you check the calendar, it's 7 weeks and 1 day until Hannah's birthday.
2 Thursday, March 5th
3 Sunday, March 22nd
4 February 26 (third bubble)
5 (challenge) Five Sundays

## Page 92, Dog Bone Graph

110 bones
25 bones
3 Friday
435 bones
5170 bones
6 (challenge) 85 bones

## Page 93, Division \& Elapsed Time

$14,7,9,4$
9, 8, 9, 4
$7,6,8,9$
2 5:15
3 4:15
41 hour and 10 minutes
555 minutes

## Page 94, Estimating to Decide if Your Answer Is Reasonable

1 a More than 200 dictionaries, but less than 400 (Choice 3)
b 276 dictionaries
c Answers and explanations will vary. Example: Yes, because $20 \times 12=240$, and $23 \times 12$ is close to $20 \times 12$.
2 28,000; 21,000; 3,600; 16,000,000; 420,000
Page 95, Multi-Digit Multiplication Practice
12,$100 ; 2,800 ; 3,500 ; 21,000 ; 28,000$
2 a 3,796
b 3,264
c 2,412
d 19,684
e 27,560

## Page 96, Darryl's Present

1 a Estimates will vary. Example: 5 hours
b Estimates will vary. Example: 10 hours
27 hours
3 Answers will vary. Example: Yes, because he already made about $\$ 100$ by working 8 hours. Working 7 hours seems like a good answer because he only needs a little more than $\$ 80$ more to buy the present.

## Use after Unit Five, Session 18 (cont.)

## Page 97, Enough Information to Solve the Problem?

| Problem | Is there enough information to solve the problem? | If there is not enough information, what information is missins? |
| :---: | :---: | :---: |
| 1 Cody wants to buy a new pair of shoes that cost $\$ 65$. His neighbors pay him to mow their lawns. If he earns $\$ 10$ for each lawn, will he have enough money to buy the shoes this week? | No | Answers will vary. Example: How many lawns is he going to mow this week? |
| 2 Jenna went to the store with a $\$ 10$ bill. She bought 3 apples that each cost 65 C and a carton of milk that cost $\$ 1.85$. How much change will she get back? | Yes | N/A |
| 3 There are 6 clusters of desks and 22 students in Mr. Fletcher's classroom. How many empty seats are there in his classroom? | No | Answers will vary. Example: How many desks are in each cluster? |
| 4 Kiyoshi is making bags of art supplies to give away as prizes on Back to School Night. If he puts 3 erasers in each bag, how many bags can he fill? | No | Answers will vary. Example: How many erasers did he start with? |
| 5 Salvador is making batches of cookies. He baked 6 batches of 8 cookies and a final batch of 4 cookies. How many cookies did he bake altogether? | Yes | N/A |

## Page 98, Choosing a Strategy

1 a Answers will vary, but draw a picture makes the best sense.
b Explanations will vary depending on the strategy selected. Example: I chose "draw a picture" because the problem is about shapes. It seems easiest to solve the problem with a picture.
c Width $=5 \mathrm{~cm}$; length $=7 \mathrm{~cm}$
d Responses will vary.

## Page 99, Find the Missing Information

1 a The bread cost $\$ 2$. (second bubble)
b $\quad \$ 3.70$
2 a Lisa's room is 9 ft . by 11 ft . (second bubble)
b Lisa will need 25 packages of carpet squares, even though there will be one square left over. It will cost her \$125.

## Page 100, Family Math Night

1 a Estimates will vary. Example: 6:15
b 6:05
c Answers will vary. Example: Yes, because $1^{1 / 2}$ hours plus 20 minutes is about 2 hours, and 45 minutes more is almost 3 hours. If it took 3 hours, they would finish at 6:30, but it was a little less than 3 hours.

## Use after Unit Six, Session 10

## Page 101, Fractions \& Mixed Numbers

1 a $1 / 4,2 / 8$
b $3 / 4,6 / 8$
c $1 / 3,2 / 6$
d $2 / 3,4 / 6$
e $2 / 2,4 / 4$
2 a $9 / 4,2^{1 / 4}\left(18 / 8,2^{2} / 8\right.$ also acceptable.)
b $7 / 3,2^{1 / 3}\left({ }^{14} / 6,2^{2} / 6\right.$ also acceptable.)
c $5 / 3,1^{2 / 3}\left({ }^{10} / 6,1^{4} / 6\right.$ also acceptable.)
3 a $4^{1 / 2}$
b $2^{1 / 4}$
c $3^{2 / 4}\left(3^{1 / 2}\right.$ also acceptable.)
d $7 / 2$
e $11 / 4$
f (challenge) $20^{2} / 3$
$\boldsymbol{g}$ (challenge) ${ }^{91 / 3}$

## Page 102, Pizza Problems

1 Lucy ate ${ }^{1 / 8}$ of a pizza more.
2 The Suarez family ate $5 / 8$ of a pizza more.
3 (challenge) $82 / 8$ is greater than $37 / 4$. Explanations will vary.
Page 103, Using Fractions on a Number Line to Solve Problems
1 a Jade
b Lester's
c Table B
$21 / 12,1 / 4,1 / 2,3 / 4,7 / 8,7 / 6$
3 a $3 / 6<3 / 4$
b $5 / 6>3 / 4$
c $5 / 6>2 / 3$
d $5 / 4>5 / 6$
e $5 / 4<4 / 3$
f ${ }^{11} / 6>5 / 3$
S (challenge) ${ }^{10 / 9}>{ }^{101} / 100$

## Page 104, Time Conversions

1 a 60
b 60
c 24
d 7
e 365
f 52
2 3,600 seconds

## Use after Unit Six, Session 10 (cont.)

Page 104, Time Conversions (cont.)
3 1,440 minutes
436 hours
5 4,380 days (not counting leap years)
6 (challenge) 28,470 days (not counting leap years)
Page 105, Showing Fractions in Simplest Form
1 a 1, 2, 4
b $1,2,4,8$
c 1,3
d $1,2,3,6$
e $1,2,3,4,6,12$
2


Page 106, Weight Conversions
1 a 16
b 2,000
2 a 240 ounces
b 184 ounces
c 2,800 ounces
d 10,000 pounds
e (challenge) 160,000 ounces
f (challenge) 150 tons
Page 107, Simplifying Fractions
1


2 a $\frac{9 \div 3}{15 \div 3}=\frac{3}{5}$
b $\begin{aligned} \frac{6 \div 2}{16 \div 2}=\frac{3}{8}\end{aligned}$

C $\begin{aligned} \frac{8 \div 4}{12 \div 4} & =\frac{2}{3}\end{aligned}$
Page 108, Capacity Conversions
1 a 8
b 2
c 2
d 4
e 4
f 8
2 a 16 cups
b 128 ounces
c 600 quarts
d 19,200 ounces

## Page 109, Fraction Practice

$110^{1 / 4}, 10^{3} / 4,11^{1 / 3}, 11^{2} / 3$
2 a 11 miles
b No; explanations will vary. Example: $11^{1 / 4}$ miles is closer to 11 than 12.
c Frank
3 1, 10, 11,
$1,10,11,11^{2} / 3$,
$11^{1} / 2,10^{1 / 3}, 10^{2} / 4$ or $10^{1} / 2,9^{2} / 3$
4 a $\frac{6 \div 3}{21 \div 3}=\frac{2}{7}$
b $\begin{aligned} \frac{8 \div 4}{} \frac{4}{36 \div 4} & =\frac{2}{9}\end{aligned}$

## Page 110, Length Conversions

1 a 12
b 3
c 36
d 5,280
2 a 144 inches
b 150 feet
c 1,800 inches
d 42,240 feet
e (challenge) Estimates will vary.
Example: 1,750 yards
f (challenge) 1,760 yards

## Use after Unit Six, Session 22

Page 111, Decimals \& Fractions
1 a Tenths
b Ones

## ANSWER KEY

## Use after Unit Six, Session 22 (cont.)

## Page 111, Decimals \& Fractions (cont.)

1 c Hundreds
d Hundredths
e Tenths
2 a 6.07
b 265.8
3 a 0.7 or . 7
b 3.05
c 0.04 or .04
d 4.38
e 1.09
f 1.9
4 a $1.12<1.2$
b $3.5>3.48$
c $23.81<23.85$
d $4.50=4.5$
e $3.06<3.65$

## Page 112, Running Problems

1 a 9.56 seconds
b Less than twice as long; explanations will vary. Example: If it had taken him twice as long to run 200 meters, his time would have been 9.86 + 9.86, which equals 19.72. 19.42 is less than 19.72

2 Steven is 0.12 seconds away from tying the world record. Students' work will vary.
3 It took her 0.75 seconds longer. Students' work will vary.

## Page 113, Using Pictures to Compare Decimals \&

 FractionsNote: Other shadings are possible.


Page 114, From Home to School \& Back
1 a \$0.15
b $\quad \$ 3.30$
2 a 3.4 miles
b (challenge) 17 miles
3 (challenge) 2.95 miles

## Page 115, Ordering Decimals \& Fractions

1 a 0.5
b 0.50
c 0.75
d 0.25
e 0.5 or 0.50
f 0.75
s 1 or 1.0
2 a

| less than $\frac{1}{4}$ | between $\frac{1}{4}$ and $\frac{1}{2}$ | between $\frac{1}{2}$ and $\frac{3}{4}$ | greater than $\frac{3}{4}$ |
| :---: | :---: | :---: | :---: |
| 0.06 | 0.28 | 0.6 | 0.92 |
| 0.15 | 0.3 | 0.71 | 0.8 |

b $0.06,0.15,0.28,0.3,0.6,0.71,0.8,0.92$
$30.08,0.23,1 / 4,0.3,3 / 4,0.78,9 / 10$
$40.02,1 / 3,5 / 4,1^{1} / 2,2.25,{ }^{10} / 4,3.6$

## Page 116, Pencils \& Paint

1 No (Keiko needs $\$ 2.95$ more to buy 5 boxes of pencils)
2 (challenge) \$595.20 (\$620 if they only buy gallons)

## Page 117, Rounding Decimals \& Fractions to the Nearest Whole Number

$10.25,3 / 4,1.05,9 / 5$
$20.75,7 / 5,57 / 10,7.05$
3 a 0
b 1
C 2
d 1
e 7
f 6
g 7
h 8
4 a (challenge) 38
b (challenge) 74
c (challenge) 27
d (challenge) 401

## Use after Unit Six, Session 22 (cont.)

## Page 118, Decimal \& Fraction Story Problems

1 Yes; explanations will vary. Example: $2.4=2^{4} / 10$. $4 / 10>1 / 4$, so 2.4 pounds will be more than enough.
2 No; explanations will vary. Example: $3^{3} / 4=3.75$, and $.75>.6$, so 3.6 pounds is not enough.
3 Yes; explanations will vary. Example: $13^{1 / 2}=13.5$. $13.8>13.5$, so they can stop now.

Page 119, Comparing Decimals \& Fractions 1

| $\mathbf{a}^{\mathbf{a}^{0.12} \frac{2}{10}}$ | $\frac{12}{100}$ and $\frac{20}{100}$ | 0.12 and 0.20 | $0.12<\frac{2}{10}$ |
| :---: | :---: | :---: | :---: |
| b | $\frac{56}{100}$ and $\frac{50}{100}$ | 0.56 and 0.50 | $\frac{56}{100}>0.5$ |
| $\begin{array}{ll} \mathbf{C l}_{0.04} \frac{9}{100} \\ \hline \end{array}$ | $\frac{4}{100}$ and $\frac{9}{100}$ | 0.04 and 0.09 | $0.04<\frac{9}{100}$ |
| $\mathbf{d}_{\frac{8}{100}} 0.3$ | $\frac{8}{100}$ and $\frac{30}{100}$ | 0.08 and 0.30 | $\frac{8}{100}<0.3$ |

2

| a $\frac{2}{3}<0.75$ | b $0.5=\frac{50}{100}$ | c $0.7>\frac{1}{2}$ |
| :--- | :--- | :--- |
| d $\frac{8}{10}>0.08$ | e $\frac{9}{100}<0.6$ | f $0.5>\frac{3}{16}$ |
| $\mathbf{S} 4.3<\frac{9}{2}$ | h $3.05>\frac{6}{2}$ | i $\frac{5}{4}=1.25$ |
| $\mathbf{j} 2.50=2 \frac{1}{2}$ | k $\frac{10}{5}<2 \frac{1}{4}$ | $\mathbf{I} \frac{12}{4}>2.75$ |

3 (challenge)

| a $3.5>\frac{305}{100}$ | b $\frac{46}{100}>0.3$ | c $0.29<\frac{29}{10}$ | d $\frac{150}{200}>0.3$ |
| :--- | :--- | :--- | :--- |

## Page 120, More Decimal \& Fraction Story Problems

1 Yes; explanations will vary.
Example: $1.15+1.56=2.71 .2 .71$ is more than $2^{1 / 2}$ pounds, so Elisa will have enough.
2 Ming; explanations will vary.
Example: Ming ran 8.6 miles. Enrico ran $81 / 2$ miles. $8.6>8^{1 / 2}$ so Ming ran farther.

## Use after Unit Seven, Session 10

## Page 121, Area Problems

1105 square inches, students' work will vary.
2210 square inches, students' work will vary.
3700 square inches, students' work will vary.
4 (challenge) 294 square inches, students' work will vary.

## Page 122, Thinking about Area

1 a 9
b 18
c 36
d 72
e Responses will vary. Example: The area is twice as big.

2 a 128
b 64
c 32
d 16
e Responses will vary. Example: The area is cut in half each time.
3 (challenge) Responses will vary. Example: When you double the length of both dimensions, the area is 4 times as big from one to the next.


Page 123, Solving Equations
1 a 12
b 11
c 8
d 42
e 48
f 86
2 a 8
b 20
c 7
d 100
e 5
f 14
S 7
h 7
3 (challenge) Responses will vary. Examples:
a $a+10=15$
b $100=20 \times \mathrm{a}$
c $50 \div \mathrm{a}=10$
d $3=a-2$

## Use after Unit Seven, Session 10 (cont.)

## Page 124, Writing \& Solving Equations

| 1 Alana had 25 seashells. She gave some to her sister. Now she has 12 seashells. How many seashells did she give her sister? | $25-\square=12$ | $25-\mathrm{s}=12$ | She gave her sister 13 shells. $\mathrm{s}=13$ |
| :---: | :---: | :---: | :---: |
| 2 George put apples into bags to sell at the farmers market. He put 5 apples into each bag. He had 45 apples altogether. How many bags did he fill? | $45 \div 5=\square$ | $45 \div 5=a$ | He put 9 apples in each bag. $a=9$ |
| 3 Mr. James had 16 bookmarks to give to the 4 students in his reading group. How many bookmarks did each student get if they all got the same number of bookmarks? | $16 \div 4=\square$ | $16 \div 4=b$ | Each kid got 4 bookmarks. $b=4$ |
| 4 Serafina had 30 stickers. She gave the same number of stickers to each of her 3 friends. Now she has 18 stickers left. How many stickers did she give to each friend? | $\begin{gathered} 30-(3 \times \square) \\ =18 \end{gathered}$ | $\begin{aligned} 30 & -(3 \times s) \\ & =18 \end{aligned}$ | She gave 4 to each friend. $s=4$ |

## Page 125, What's the Rule



## Page 126, Number Patterns \& Divisibility

1 a $14,16,18,20,22,24$
b $30,35,40,45,50,55$
c $50,60,70,80,90,100$
2 Responses will vary. Examples:
a All the count-by-2 numbers are even. They all end in multiples of 2 .
b All the count-by-5 numbers end in 0 or 5 .
c All the count-by-10 numbers end in 0 . They are also all even.
3 a 40: yes, yes, yes
b 75: no, yes, no
c 37: no, no, no
d 110: yes, yes, yes
e 364: yes, no, no
f 930: yes, yes, yes
g 361: no, no, no
h 576: yes, no, no
i 785: no, yes, no
Page 127, Ounces, Cups, Pints, Quarts \& Gallons
1 a 8
b 2
c 2
d 4
e 4
f 8
2640 ounces
3 (challenge) 7 pints (112 ounces, 14 cups, or $3^{1 ⁄ 2} 2$ quarts are also acceptable responses.)

Page 128, Find or Write the Matching Equation 1


2 The letter students use to represent the unknown amount may vary. Examples:
a $30 \div 5=r$
b $9 \div 3=\mathrm{b}$
c $\$ 45-\mathrm{m}>\$ 30$
Page 129, Thinking about Number Patterns
1 a 42, 44, 46, 48, 50, 52
b $60,65,70,75,80,85$
c $90,100,110,120,130,140$
2 Responses will vary. Examples:

- It must be even.
- It must be a multiple of 10.
- It must be divisible by 2.

3 (challenge) Responses and explanations will vary. Example: I agree with Nia because $2 \times 3=6$, so any multiple of 6 must also be a multiple of both 2 and 3 . If you look at the first few multiples of 6 , for example $(6,12,18,24,30,36$, and 42), they're all even, so they have to be multiples of 2. You can divide them all by 3, so they're all multiples of 3 as well.

## Use after Unit Seven, Session 10 (cont.)

## Page 130, The Paper Problem

1 Drawings will vary. Examples:
a

b


2 (challenge) Responses will vary. Example: The first way shown above wastes a $2^{\prime} \times 11^{\prime}$ piece of paper or 22 square feet. The second way shown above wastes a $2^{\prime} \times 7^{\prime}$ piece of paper, or 14 square feet. The second way wastes less paper.

## Use after Unit Eight, Session 10

Page 131, The Vegetable Eating Contest
12 students
215 students
3 Friday
4 Tuesday, Wednesday, Thursday
5 Responses will vary. Example: Room 108 did a better job because there was only 1 day more kids from that class ate less vegetables. On all the other days, they ate more or the same amount. For the whole week, the kids from 106 only ate vegetables 61 times, and the kids from 108 ate vegetables 71 times.

## Page 132, Room 108's Fruit Graph

1 a-c


2 a $11,12,13,14,15,15,16,16,17$
b $17-11=6$
c There are 2 modes: 15 and 16
d 15

## Page 133, Two Different Kinds of Data

1 Numerical; A
2 Categorical; D
3 Categorical; B
4 Numerical; C

## Page 134, How Tall Are We?

$150,51,52,52,52,53,53,54,54,57,60$
2 a $60-50=10$ inches
b Responses will vary. Example: The tallest friend was 10" taller than the shortest friend.
3 a 52 inches
b Responses will vary. Example: The height that was most common is the group was 52".
4 a 53 inches
b Responses will vary. Example: Half of the
friends were 53" or taller, and half were 53" or shorter.

## Page 135, Estimate or Exact Measurement?

1 a E
b M
c E
d M
e M
2 Responses will vary.
3 Responses will vary.

## Page 136, Multiplication Review

1 a 15, 6, 27, 9, 24, 18, 21, 12
b $35,14,63,21,56,42,49,28$
c $45,18,81,27,72,54,63,36$
2 8, 7, 5, 8, 6
3 9, 3, 7, 6
4 282; 2,002; 1,417; 40,932

## Page 137, Decimal \& Fraction Riddles

1 a 0.25
b 0.75
c 0.7
d 0.02
e 0.30
f 0.53
g 2.06
h 3.25

## ANSWER KEY

## Use after Unit Eight, Session 10 (cont.)

Page 137, Decimal \& Fraction Riddles (cont.)
2 a $3 / 2=1.5$
b $0.6>9 / 100$
c ${ }^{36} / 100>0.25$
d $0.75=9 / 12$
e $83^{1} / 2>83.48$
f $125 / 100>1.07$
( $82 / 100<0.9$
h $74^{3} / 4<74.8$
3 Responses will vary. Examples:
a 0.90

b 0.20

c 0.34


Page 138, Jeff's Wallpaper Problem
1328 square feet
290 square feet
3 (challenge) The area stays the same.


Page 139, Multiplication, Area \& Perimeter Review 1 a


1 b


2 a Area $=1,862$ square units Perimeter $=174$ units
b Area $=15,038$ square units Perimeter $=558$ units
c Area $=11,164$ square units Perimeter $=474$ units

3 (challenge)
$\square$ Perimeter: $(2 \times 2)+(2 \times 16)=36$ units Area: $2 \times 16=32$ square units

## Page 140, Tiling the Kitchen Floor

1 Jean and Mike are covering their kitchen floor with big tiles. The floor is 21 feet long and 17 feet wide. The tiles they are using are each 1 foot wide and 3 feet long. Each tile weighs 5 pounds. The tiles come in packages of 10 that each cost $\$ 120$. How much will it cost them to cover their floor with these tiles?
a Responses will vary. Example: How much will Jean and Mike have to pay for the tiles they need?
b \& c See above.
d $\$ 1,440.00$

## Use after Unit Eight, Session 10 (cont.)

## Page 140, Tiling the Kitchen Floor (cont.)

2 Responses will vary. Example: The floor is 357
square feet. The tiles are 3 square feet. If you divide
360 by 3, you get 120. That's 12 packages of 10 tiles.
$12 \times 120=\$ 1,440.00$ so I know I'm right, even
though they'll have one tile left over.

$\qquad$
$\qquad$

## Multi-Digit Addition Review

1 Solve the problems below. Show all your work.

| 120 | 459 | 533 |  |
| ---: | ---: | ---: | ---: |
| +207 | +320 | +429 | 332 |
|  |  |  | +845 |
|  | 538 | 347 | 1,438 |
| +372 | +975 | +423 | 2,754 |

2 Rewrite these problems in vertical form. Then solve them. Show all your work.

| example $583+645$ | a $276+986$ | b $362+1,534$ |
| :--- | :--- | :--- |
| 1 |  |  |
| 583 <br> +645 <br> 1,228 |  |  |

## CHALLENGE

3 Use two numbers from the box to complete each addition problem below. You will use some numbers more than once.

| 97 | 204 | 297 | 405 | 498 | 607 |
| :--- | :--- | :--- | :--- | :--- | :--- |


$\qquad$

## Addition Story Problems

Solve the problems below. Show all your work.
1 Last week, Jose picked 325 pounds of apples. Gloria picked 236 pounds of apples. How many pounds of apples did Jose and Gloria pick altogether? Show all your work.


2 The year Marcus was born, there were 2,308 people living in the town where his parents lived. Now Marcus is nine years old, and the town has 856 more people than it did when he was born. How many people live in the town where Marcus lives? Show all your work.

## CHALLENGE

3 Fran is flying in an airplane. Right now it is 13,500 feet above the ground. It will go 16,800 more feet before it stops going any higher. How high will the airplane be then? Show all your work.

$\qquad$
$\qquad$

## Multi-Digit Subtraction Review

1 Solve the problems below. Show all your work.

| 649 | 2,964 | 482 | 3,851 |
| ---: | ---: | ---: | ---: |
| -514 |  |  |  |
|  | -723 | -391 | $-1,470$ |
|  |  |  |  |
| , 582 | 6,739 | 385 | 7,846 |
| -950 | -547 | -197 | $-4,928$ |

2 Rewrite these problems in vertical form. Solve them and then add the numbers to check your answer. Show all your work.

| example $906-458$ | a $607-569$ | b 8,046-753 |  |
| :---: | :---: | :---: | :--- |
| 89 | 11 |  |  |
| 906 | 458 |  |  |
| $\frac{-458}{448}$ | $\frac{+448}{906}$ |  |  |

## CHALLENGE

3 Complete these problems. There is more than one correct solution to the first two problems.
a

b

C

$\qquad$

## Subtraction Story Problems

Solve the problems below. Show all your work.
1 Last week the cafeteria served 486 breakfast sandwiches. This week they served 538 breakfast sandwiches. How many more breakfast sandwiches did they serve this week?


2 There were 6,742 bags of potato chips stored in the cafeteria. They served 781 of them at lunch. How many bags of potato chips are left?


## CHALLENGE

3 At the basketball game last night, the home team was losing by 48 points at half time, so fans started to leave. If there were 18,862 people at the game when it started and 6,946 went home at half time, how many people were still at the game for the second half?

$\qquad$

## Add, Subtract \& Multiply

1 Solve the addition and subtraction problems below Show all your work.

| $\$ 1.74$ | $\$ 20.71$ | $\$ 43.53$ |  |
| ---: | ---: | ---: | ---: |
| $+\$ 2.25$ | $+\$ 6.55$ |  |  |
|  |  | $\$ 7.18$ |  |
| $\$ 5.32$ | $\$ 3.42$ | $\$ 54.66$ | $\$ 8.14$ |
|  | $-\$ 1.84$ | $-\$ 6.93$ | $\$ 3.03$ |

2 Rewrite these problems in vertical form. Then solve them. Show all your work.

| example $\$ 2.96+\$ 8.45$ | a $\$ 4.72+\$ 2.39$ | b $\$ 506.00-\$ 3.57$ |
| :---: | :---: | :---: |
| $\$ 2.16$ <br> $+\$ 8.45$ |  |  |
| $\$ 11.41$ |  |  |

3 Complete these multiplication problems.

| 3 | 5 | 9 | 2 | 0 | 1 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $\times 8$ | $\times 4$ | $\times 3$ | $\times 7$ | $\times 3$ | $\times 6$ |
| 6 | 7 | 4 | 0 | 7 | 2 |
| $\times 4$ | $\times 4$ | $\times 8$ | $\times 9$ | $\times 7$ | $\times 10$ |

## Shopping Problems

Solve the problems below. Show all your work.
1 George, Nico, and Brandon went to the store. George spent $\$ 1.86$ on fruit. Nico spent $\$ 2.03$ on a drink. Brandon spent $\$ 1.45$ on candy. How much did they spend altogether?

2 Emma had $\$ 5.80$ in her pocket when she went to the store. If she spent $\$ 3.97$, how much money did she have left?

## CHALLENGE

3 Susie has three brothers who are triplets. For their birthday, she bought each brother a rubber ball that cost 71ष and a T-shirt that cost $\$ 12.99$. How much did she spend altogether on their birthday presents?

$\qquad$
$\qquad$

## Addition, Subtraction \& Clock Problems

1 Solve the problems below Show all your work.

| 845 | 795 <br> +127 <br> +109 |  | 4,639 <br> $+2,467$ |
| ---: | ---: | ---: | ---: |
| 6,536 | 805 | 2,305 | 379 <br> +196 <br> $-2,618$ |

2 Use the clocks to solve the problems below.
a Anna leaves school at 3:10 to walk home. The clock below shows what time she gets home. How long does it take Anna to walk home?

b Joseph leaves school at 3:05 to take the bus home. The clock below shows what time he gets home. How long is Joseph's bus ride?

## CHALLENGE

C Maribel leaves school at 3:10 to walk home. One day, she stopped at the store on the way home and spent 20 minutes shopping. If she got home at the time shown on the clock, how much time did she spend walking?


## Miles, Books \& Jellybeans

Solve the problems below. Show all your work.
1 Felipe's family is driving to see his grandmother. Altogether, they have to drive 856 miles. If they have gone 269 miles so far, how much farther do they have to drive?


2 In our classroom library, we had 326 books. We gave 38 books to the other fourth grade classroom, but our teacher got 97 more books for our classroom library. How many books do we have in our classroom library now?


## CHALLENGE

3 At the school fair, students were guessing how many jellybeans were in a jar. Nicky guessed there were 296 jellybeans. Caitlyn guessed there were 435 jellybeans. Samira guessed a number that was 52 more than Nicky and Caitlyn's put together. What was Samira's guess?

$\qquad$
$\qquad$

## Round 'Em Up!

1 Solve the problems below. Show all your work.

|  | 635 |  | 5,538 |
| ---: | ---: | ---: | ---: |
| 7,538 | 202 | 2,648 | $-1,263$ |
| -724 | +169 | $+4,397$ | - |

2 Round the numbers below to the nearest ten. When you round to the nearest ten, look at the number in the ones place. If it is 5 or higher, round up to the next highest ten. If it is less than 5 , keep the number in the tens place the same.

| ex a $63 \quad 60$ | ex b $186 \quad 190$ | a 47 | b 52 |
| :--- | :--- | :--- | :--- |
| C 35 | d 94 | e 122 | f 856 |
| $\mathbf{S} 267$ | h 993 | i 1,247 | j 2,052 |

3 Round the numbers below to the nearest hundred. When you round to the nearest hundred, look at the number in the tens place. If it is 5 or higher, round up to the next highest hundred. If it is less than 5, keep the number in the hundreds place the same.

| ex a $163 \quad 200$ | ex b 627 600 | ex c 82 100 | a 203 |
| :--- | :--- | :--- | :--- |
| $\mathbf{b} 254$ | c 822 | d 439 | e 67 |
| f 153 | $\mathbf{S} 764$ | h 449 | i 657 |



4 Write two different numbers that round up or down to each number shown.

| ex 400 | 438 | 384 | a 20 | b 80 |
| :--- | :--- | :--- | :--- | :--- |
| C 100 |  | d 300 | e 700 |  |

$\qquad$

## Centimeters, Decimeters \& Meters

The information below will help you solve Problems 1-3.

- There are 10 centimeters in 1 decimeter.
- There are 10 decimeters in 1 meter.

1a Luis and Sara measured their heights in centimeters. Luis was 132 cm tall, and Sara was 148 cm tall. What is the sum of their heights in centimeters? Show your work.

b What is the sum of their heights in decimeters? Show your work.

2 The snail crawled 1 meter in the morning, 4 decimeters after lunch, and 60 centimeters before falling asleep. How far did the snail crawl altogether? Express your answer in centimeters, decimeters, and meters. Show your work.
a The snail crawled $\qquad$ centimeters.
b The snail crawled $\qquad$ decimeters.

C The snail crawled $\qquad$ meters.

## CHALLENGE

3a Sidney Snail crawled two and a half meters in a half hour. Sherman Snail crawled 487 centimeters in an hour. Who crawled farther, Sidney or Sherman? How much farther? Show your work.
b Which snail was faster? Explain your answer.

$\qquad$
$\qquad$

## Multiplication \& Division Facts

1 Solve the problems below.

| 8 |
| ---: |
| $\times 3$ |
|  |
| 1 |
| $\times 8$ |


$\qquad$

$$
42 \div 7=
$$

$$
36 \div 4=
$$

$\qquad$
$20 \div 5=$ $\qquad$
$16 \div 8=$ $\qquad$
$18 \div 3=$ $\qquad$
$6 \div 3=$ $\qquad$
$\qquad$
$63 \div 7=$

2 Fill in the missing numbers.



## CHALLENGE

3 Use words and/or numbers to show how you could use the answer to $4 \times 8$ to solve $4 \times 16$.
$\qquad$

## Sandwiches, Pizza \& Books

1 Rodney had a friend over on Saturday. His dad took them out for sandwiches. Each person (Rodney, his dad, and his friend) got a sandwich for \$6. How much did they spend on sandwiches altogether? Show all your work.


2 Jasmine had a pizza party with 3 of her friends to celebrate the last day of school. They ordered 2 pizzas. Each pizza had 8 slices. They all ate the same amount of pizza and finished both pizzas. How many pieces did each person eat? Show all your work.

CHALLENGE
3 There were 12,387 books in the school library. The librarian bought 445 more books to add to the library and put 126 books on the Give Away shelf near the office. How many books are in the library now? Show all your work.

$\qquad$
$\qquad$

## All in the Family

1 Fill in the missing number in each triangle. Then write the facts in the fact family.


## CHALLENGE

2 Use multiplication and division to find the secret path through each maze. You can only move one space up, down, over, or diagonally each time. Write two equations to explain the path through the maze.

$\qquad$

## Flowers, Shells \& Cards

1 Lisa, Imani, and Carla, and were picking flowers for their aunt. If they each picked 8 flowers, how many flowers did they pick altogether? Show all your work.


2 Frank collected 18 beautiful shells for his 3 cousins. If he gave each cousin the same number of shells, how many shells did each cousin get? Show all your work.


CHALLENGE
3 Four friends were making cards to sell at the holiday sale. Each friend made 9 cards. They put all their cards together and then bundled them in groups of 6 cards to sell. How many bundles of 6 cards did they have to sell? Show all your work.

$\qquad$
$\qquad$

## Multiples \& Multiplication Facts

1 When you count by a number, you are naming the multiples of that number. For example, if you skip count by 5's, you are naming the multiples of five: 5,10 , $15,20,25$, and so on. In each sequence below, fill in the missing multiples.

| ex $5,10,15, \ldots 20,25,30, \ldots$ | $\mathbf{a} 3,6, \ldots, 12,15,18, \ldots, 24$ |
| :--- | :--- |
| $\mathbf{b} 6, \ldots, 18, \ldots, 30$ | $\mathbf{C} 9,18, \ldots, 36,45, \ldots, 63$ |

2 Circle all the multiples of the number in each box.

| ex | 5 | 16 | 20 | $(15)$ | 42 | 36 | 45 | 18 | $\mathbf{a}$ | 2 | 5 | 6 | 7 | 8 | 14 | 21 | 10 |
| :--- | :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{b}$ | 4 | 8 | 6 | 14 | 16 | 20 | 28 | 19 | $\mathbf{c}$ | 7 | 22 | 33 | 21 | 14 | 16 | 42 | 35 |
| $\mathbf{d}$ | 8 | 28 | 32 | 48 | 16 | 60 | 72 | 19 | $\mathbf{e}$ | 3 | 21 | 35 | 18 | 36 | 44 | 12 | 29 |

3 Fill in the missing numbers.


## CHALLENGE



## Tasty Treats

1 Joseph works at an ice cream stand. He sold 5 milkshakes per hour on Saturday. If he worked for 8 hours, how many milkshakes did he sell on Saturday? Show all your work.


2 On the last day of school, Mr. Jackson brought in some cookies for the 6 students in his reading group. He had a box with 15 cookies in it and, to be fair, he gave each student the same number of cookies. How many cookies did each student get? Show all your work.

## CHALLENGE

3 At her farm stand, Judy had 126 pounds of lettuce, 267 pounds of corn, and 155 pounds of tomatoes. She sold 83 pounds of lettuce, 182 pounds of corn, and 86 pounds of tomatoes. How many pounds of vegetables does she have left? Show all your work.
$\qquad$
$\qquad$

## Arrays \& Factors

1 Draw and label a rectangular array to show two factors for each number. Do not use 1 as one of your factors. Then write the fact family that goes with your array.


2 List all the factors of each number below.

| ex 12 | $1, \sqrt{2,3,4,6,12}$ | a 16 |  |
| :--- | :--- | :--- | :--- |
| b 17 |  | c 24 |  |
| d 9 |  | e 36 |  |

3a Circle the prime number(s) in problem 2.
b Draw a square around the square number(s) in problem 2.

## CHALLENGE

4 Fill in the missing digits in the problems below.

## example

| 78144 |
| ---: |
| -693 |
| 141 |

a

b

$\qquad$

## The Big Race \& the Walk-a-Thon

1 Hannah is running in big race that is 27 kilometers long. If she runs 9 kilometers per hour, how long will it take her to run the race? Show all your work.


2 Peter is in a walk-a-thon. He walks about 5 kilometers per hour. If he walks for 6 hours, about how far will he walk? Show all your work.


3 There are 32 students in Ms. Lopez's fourth grade class. If she made 2 equal groups of students, there would be 16 students in each group. What are the other ways she could divide the students into equal groups? Show all your work.
$\qquad$
$\qquad$

## Area \& Perimeter

1 Find the area and perimeter of each rectangle. Area is the total amount of space covered by the rectangle. Perimeter is the distance around the rectangle.


2 Find the area and perimeter of this shape. Show all your work.

$\qquad$

## Area \& Perimeter Story Problems

You can make sketches to help solve the problems below. Remember to include the units of measurement in your answers. Show all of your work.

1a The classroom rug is 9 feet long and 8 feet wide. What is the total area of the rug?
b What is the perimeter of the rug?
$\mathbf{2 a}$ Chrissy is going to make a big painting on a piece of wood that is 4 feet wide and 7 feet long. What is the total area of the piece of wood?
b What is the perimeter of the piece of wood?

3 The school playground measures 465 feet by 285 feet. What is the perimeter of the playground?
$\qquad$
$\qquad$

## Place Value \& Perimeter

1 Write each number below in standard form.
example twenty-three thousand, five hundred six 23,506
a nine thousand, two hundred forty-eight $\qquad$
b seventeen thousand, six hundred thirty-three $\qquad$
C thirty-two thousand, fifty-eight $\qquad$
2 Identify the place value and value of the underlined digit in each number.

| Number | Place Value | Value |
| :--- | :--- | :--- |
| ex $3 \underline{6}, 874$ | thousands | six thousand |
| a $17, \underline{6} 04$ |  |  |
| b $8, \underline{0} 97$ |  |  |
| C $\underline{41,000}$ |  |  |

3 Find the perimeter of each rectangle below. Show your work.

$\qquad$

## Measuring to Find Area \& Perimeter

Use the centimeter side of a ruler to measure each rectangle below. Then find the area and perimeter of each rectangle. Area is the total amount of space covered by the rectangle, and perimeter is the total distance around the rectangle.

$\qquad$
$\qquad$

## Multiplication \& Division Practice

1 Solve the following multiplication and division problems.

| 7 | 8 | 4 | 5 | 2 |
| ---: | ---: | ---: | ---: | ---: |
| $\times 3$ |  |  |  |  |
| $\times 2$ | $\times 9$ | $\times 5$ | $\times 4$ | 9 |

$$
\begin{array}{lll}
32 \div 4= & 20 \div 5= & 16 \div 8= \\
24 \div 4= & 24 \div 3= \\
15 \div 3= & 40 \div 5= & 36 \div 6= \\
\hline
\end{array}
$$

2 Fill in the missing numbers.



3 Solve the following multiplication problems.


## CHALLENGE

4 Fill in the missing numbers.
$300 \div$ $\qquad$ $=3$

$$
8,000 \div \square=1,000
$$

$40 \div$ $\qquad$ $=4$
$\qquad$

## Multiplication \& Division Story Problems

1 The cafeteria has 7 boxes with bags of dried apples in them. If there are 100 bags in each box, how many bags of dried apples are there in all? Show all your work.


2 Frank is riding his bike at 10 miles per hour. If he rides for 2 hours, how far will he go? Show all your work.


3 A factory makes 1000 footballs each day. How many footballs does the factory make each week if it is open Monday through Saturday? Show all your work.


## CHALLENGE

4 Leanne is dividing 100 seashells into equal groups. She can make 2 equal groups of 50. What are the other equal groups she can make? Show all your work.


## Expanded Notation \& Fact Families

1 Complete each equation by writing a number in standard form.

| ex $17,508=10,000+7,000+500+8$ | a $=20,000+400+50+6$ |
| :---: | :---: |
| b $=30,000+2,000+100+10+2$ | C $=7,000+40+6$ |
| d $\quad=90,000+6,000+30+5$ | e |
| f $=10,000+3,000+800+50+5$ | $\mathbf{S}$ |

2 Fill in the missing number in each equation.

| ex $40,000+6,000+\ldots 5+8=46,058$ | a $41,092=40,000+\ldots+90+2$ |
| :--- | :--- | :--- |
| $\mathbf{b} 50,000+1,000+\ldots+50+4=51,354$ | c $17,035=10,000+\ldots+30+5$ |
| d $96,035=90,000+6,000+\ldots+5$ | e $20,000+\ldots+50+6=20,456$ |
| f $2,000+500+\ldots+7=2,567$ | $\mathbf{S} 20,408=20,000+\ldots+8$ |

3 Fill in the missing information for each rectangle. Then write the multiplication and division fact family that goes with the rectangle.


## Money \& Stadium Seats

1 Mr. Parker was buying presents for his sons. He spent one hundred thirty-six dollars on a remote controlled car for George. He spent fifty-nine dollars on a video game and twelve dollars on a book for Carl. How much more money did Mr. Parker spend on George's present than on Carl's? Show all your work.


2 The stadium can hold twenty thousand people. If seventeen thousand, four hundred ninety-six people came to a game at the stadium, how many empty seats were there? Show all your work.


## CHALLENGE

3 Jasmine wants to buy a car that costs six thousand, five hundred dollars. She has four thousand, six hundred sixty-five dollars in the bank. Her grandmother offered to give her five hundred dollars to help pay for the car. How much more money does Jasmine need to buy the car? Show your work.

$\qquad$
$\qquad$

## Time after Time

1 Show what time it would be 25 minutes after the time on the first clock.


2 Show what time it would be 15 minutes before the time shown on the first clock.


3 Show what time it would be 35 minutes after the time shown on the first clock.


## CHALLENGE

4 Show two times that are 85 minutes apart.

$\qquad$

## Time \& Distance Problems

1a It takes 10 minutes to bake a batch of cookies. Simon plans to bake 7 batches of cookies. How long will it take? Write your answer in hours and minutes. Show all your work.


## CHALLENGE

b If Simon starts baking at 2:45 pm, what time will he be done? You can use the clock below to help figure it out. Show all your work.

$2 \mathbf{a}$ A spider is crawling on a street. It took the spider 3 hours to crawl 3000 centimeters. On average, how many centimeters did the spider crawl each hour? Show all your work.
b There are 100 centimeters in a meter. On average, how many meters did the spider crawl each hour? Show all your work.

## CHALLENGE

C If the spider crawled for an hour and a half, how many meters would it crawl? Explain your answer.

$\qquad$
$\qquad$

## Number Riddles

1 Draw a line to show which number matches each description. The first one is done for you.

| example This number has a 2 in the thousands place. | 46,305 |
| :--- | :--- |
| $\mathbf{a}$ This is an even number with a 6 in the hundreds place. | 32,617 |
| $\mathbf{b}$ This number is equal to $30,000+4,000+80+2$. |  |
| $\mathbf{C}$ This number is 1000 less than $46,052$. | 19,628 |
| d This is an odd number with a 6 in the thousands place. | 34,082 |

2 Write each number in words.

| example 17,329 | seventeen thousand, three hundred twenty-nine |
| :--- | :--- |
| a 33,072 |  |
| b 86,105 |  |
| C 74,629 |  |

## CHALLENGE

3 Write an even number that has a 7 in the hundreds place, has an odd number in the thousands place, and is a multiple of 10 .
$\qquad$

## The Arcade \& the Animal Shelter

1 Rene is going to the arcade to play video games. She has 9 quarters in her pocket. How much money does she have altogether?
a Write the question in your own words below.
The question I am being asked to answer is...
b Solve the problem. Show all your work.
$\mathbf{2}$ Lin is collecting money for the animal shelter. Five of his friends each gave him a dime and a nickel. How much money did they give Lin altogether?
a Write the question in your own words below.
The question I am being asked to answer is...
b Solve the problem. Show all your work.
$\qquad$
$\qquad$

## Counting Coins \& Bills

1 Write each money amount in decimal form. You can draw loops around groups of coins that make it easier for you to find the total amount.

|  | a | $b$ |
| :---: | :---: | :---: |
| C | d |  |

2 Write each money amount in decimal form.
example 1 dollar bill, 5 quarters, 3 pennies
$\$ 2.28$
a 3 dollar bills, 9 nickels, 2 pennies
b 6 quarters, 2 dimes, 4 pennies
C 3 quarters, 6 nickels, 7 pennies
d 4 dollar bills, 3 half dollars, 7 nickels $\qquad$
e 2 dollar bills, 7 quarters, 16 pennies $\qquad$

f 12 quarters, 80 nickels, 97 pennies $\qquad$
S 24 quarters, 140 nickels, 30 dimes, 45 pennies $\qquad$

## How Much Change?

1 Sharon bought a bottle of iced tea that cost $\$ 1.65$. She paid for it with a $\$ 5$ bill. How much change did she get back? Show all your work.


2 Toshi bought a magazine that cost $\$ 3.89$. He paid for it with a $\$ 10$ bill. How much change did he get back? Show all your work.


## CHALLENGE

3 Apples are on sale for $99 \$$ per pound. Mr. James bought 6 pounds of apples and paid for them with a $\$ 10$ bill. How much change did he get back? Show all your work.

$\qquad$
$\qquad$

## Multiplying with Money

1 Use the arrays of coins to help solve each multiplication problem below. Show all your work.

|  |  | $\begin{array}{r} 20 \\ 20 \\ +20 \\ \hline 60 \end{array}$ |
| :---: | :---: | :---: |
| a $\begin{array}{r} 15 \\ \times 5 \\ \hline \end{array}$ |  |  |
| b $\begin{array}{r} 21 \\ \times \quad 5 \\ \hline \end{array}$ |  |  |

## CHALLENGE

2 Solve the multiplication problems below. Show all your work.

$\qquad$

## Money \& Miles Per Hour

1 Jamil earns $\$ 12$ per hour. He worked 5 hours yesterday. How much money did he earn? Show all your work.


2 Ramona was riding her bike at 13 miles per hour. She biked for 3 hours. How many miles did she go? Show all your work.

## CHALLENGE

3 Jamil earns $\$ 12$ per hour. He worked 25 hours last week. How much money did he earn? Show all your work.

$\qquad$

## Fill the Frames

Label each array frame below. Then fill it in with labeled rectangles. Write an addition equation to show how you got the total. Then write a multiplication equation to match the array.

$\qquad$
$\qquad$

## Apricots \& Carrots

1 Gregory bought some apricots for his 3 sisters. Each apricot cost 154. He bought 3 apricots for each sister. How much did he spend altogether? Show all your work.

2 Lucia is buying carrots that are 754 per pound. How much would 3 pounds of carrots cost? Show all your work.


CHALLENGE
3 Nancy is doing laundry in her apartment building. It costs $\$ 1.00$ to run the washing machine and $\$ 1.25$ to run the dryer. Nancy has 27 quarters. How many loads of laundry can she put through the washer and dryer? Show all your work.

$\qquad$
$\qquad$

## Addition \& Multiplication Puzzles

1 Complete the addition puzzle box below. The sums of the rows and the diagonals are in bold boxes.

| example |  |  |  | a |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 125 | 25 | 50 | 200 |  |  | 13 |  | 179 |
| 50 | 150 | 33 | 233 |  | 80 |  | 30 | 160 |
| 13 | 25 | 350 | 388 |  | 75 | 13 | 50 |  |
|  |  |  | 625 |  |  |  |  | 166 |

2 Complete the multiplication puzzle box below. The products of the rows and the diagonals are in bold boxes.

| example |  |  |  | a |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 10 | 2 | 1 | 20 |  | 100 |  | 3 | 600 |
| 2 | 2 | 100 | 400 |  |  |  | 1,000 | 8,000 |
| 1,000 | 3 | 2 | 6,000 |  |  | 3 | 2 | 60 |
|  |  |  | 40 |  |  |  |  | 400 |

3 Complete each equation below.
ex $2 \times 1 \times 1,000=2,000$
a $\quad \times 4 \times 100=800$
b $3 \times 3 \times$ $\qquad$ $=90$
C $1 \times$ $\qquad$ $\times 1,000=8,000$
d $3 \times$ $\qquad$ $\times 10=60$
e $2 \times 2 \times$ $\qquad$ $=400$

## Candy \& Video Games

1 Joya bought a candy bar for 894 and a giant lollipop for $\$ 1.35$. How much did she spend altogether on the candy?
a Write the question in your own words below.
The question I am being asked to answer is...
b Solve the problem. Show all your work.


2 Devante wants to buy a video game system that costs $\$ 326$. He has $\$ 187$ dollars in his bank account. How much more money does Devante need to buy the game system?
a Write the question in your own words below.
The question I am being asked to answer is...
b Solve the problem. Show all your work.

$\qquad$
$\qquad$

## Multiplication Puzzles

Complete the multiplication puzzle boxes below. The products of the rows and the diagonals are in bold boxes.

| example |  |  |  | 1 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 0 | 2 | 0 |  | 3 |  |  | 75 |
| 6 | 3 | 3 | 54 |  | 7 | 2 |  | 42 |
| 7 | 1 | 8 | 56 |  | 6 | 2 |  | 72 |
|  |  |  | 24 |  |  |  |  | 36 |
| 2 |  |  |  | 3 |  |  |  |  |
|  | 5 |  | 75 |  |  |  | 5 | 160 |
|  | 4 | 5 | 60 |  | 2 | 5 |  | 50 |
|  | 5 |  | 150 |  | 4 | 3 |  | 48 |
|  |  |  | 120 |  |  |  |  | 80 |
|  |  |  |  |  |  |  |  |  |
|  | 2 | 20 | 280 |  | 3 |  |  | 360 |
|  |  | 4 | 60 |  |  | 6 | 10 | 420 |
|  | 6 |  | 72 |  | 5 | 25 |  | 250 |
|  |  |  | 63 |  |  |  |  | 36 |

## The Information You Need

Sometimes story problems include information that you don't need to solve the problem. Read the problems below carefully to see which information is extra.

1 Emilio has $\$ 125$. He wants to buy a new video game system that usually costs $\$ 312$ but is on sale for $\$ 289$. He wants to borrow money from his brother so that he can buy it while it is on sale. How much money will Emilio need to borrow to buy the game system while it is on sale?
a Restate the question in your own words.
b Underline the information in the problem you do need to solve the problem.
C Cross out the information in the problem you don't need to solve the problem.
d Solve the problem. Show all your work.

2 Marie had a $\$ 5$ bill, three $\$ 1$ bills, 2 quarters, and 3 pennies in her pocket. She bought a bottle of juice for $89 \$$ and an apple for $65 ¢$. If she paid with two $\$ 1$ bills, how much change did she get back?
a Restate the question in your own words.
b Underline the information in the problem you do need to solve the problem.
C Cross out the information in the problem you don't need to solve the problem.
d Solve the problem. Show all your work.
$\qquad$

## Fractions of a Foot

1 Write two names for each fraction of a foot. You can draw on the rulers to help.


2 Shade the ruler to show each fraction of a foot. Then write another name for the fraction. You can draw lines to divide the rulers into equal parts.

| example | a |
| :---: | :---: |
|  | [10 |
| $\frac{9}{12} \quad \frac{3}{4}$ | $\frac{8}{12}$ |
| b | C |
|  |  |
| $\frac{10}{12}$ | $\frac{12}{12}$ |
| d | e |
|  |  |
| $\frac{2}{6}$ | $\frac{2}{3}$ |

## More Fractions of a Foot

1 Write the number of inches in each fraction of a foot. You can look at page 41 to help.
a $\frac{1}{2}$ of a foot is equal to $\qquad$ inches
b $\frac{1}{4}$ of a foot is equal to $\qquad$ inches

C $\frac{1}{6}$ of a foot is equal to $\qquad$ inches
d $\frac{1}{3}$ of a foot is equal to $\qquad$ inches

2 Write the number of inches in each fraction of a foot. Use the rulers below and the information in problem 1 to help. Then circle the greater fraction in each pair. If they are equal, circle them both.


|  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |


| example$\left(\frac{1}{2}\right)$ <br> 6 inches$\frac{1}{4}$ <br> 3inches | a | $\frac{1}{3}$ | $\frac{1}{4}$ |  |
| :--- | :---: | :---: | :--- | :---: | :---: |
| b $\frac{2}{3}$ | $\frac{1}{2}$ | C | $\frac{1}{2}$ | $\frac{3}{6}$ |
| d $\frac{2}{3}$ | $\frac{3}{4}$ | e | $\frac{1}{4}$ | $\frac{2}{3}$ |

3 Write all the factors of each number. Hint: Think about pairs of factors that multiply to make the number.

| ex 18 | $\sqrt{1, \sqrt{2,3,6}, 9,18}$ | $\mathbf{a} 12$ |  |
| :--- | :--- | :--- | :--- |
| b 15 |  | c 36 |  |
| d 60 |  | e 120 |  |

$\qquad$
$\qquad$

## Comparing Fractions on a Number Line

When you are comparing fractions, it can help to think about how close those fractions are to landmarks like one whole and one-half. Use the number line to help complete the problems below.


1 Complete the table.

| Circle the fraction that is <br> greater than $\frac{1}{2}$. |  |  |
| :--- | :---: | :--- |
| example $4 \frac{4}{6}$ | Write a number sentence showing which fraction is greater. |  |
| a | $\frac{1}{6}$ | $\frac{2}{3}$ |

2 Complete the table.

| Circle the fraction that is <br> closest to 1. |  |  | Write a number sentence showing which fraction is greater. |
| :--- | :---: | :---: | :--- |
| a | $\frac{3}{4}$ | $\frac{2}{3}$ |  |
| b | $\frac{5}{6}$ | $\frac{2}{3}$ |  |
| C | $\frac{3}{4}$ | $\frac{5}{6}$ |  |

## Egg Carton Fractions

1 Solve the following multiplication and division problems. They might help you think about the egg cartons in problem 2.
$12 \div 2=$ $\qquad$
$12 \div 3=$ $\qquad$
$12 \div 4=$ $\qquad$
$12 \div 6=$ $\qquad$
$6 \times 3=$ $\qquad$
$4 \times 2=$ $\qquad$
$3 \times 3=$ $\qquad$ $2 \times 5=$ $\qquad$

2 Write a fraction to show the amount of each egg carton that is filled with eggs. The cartons are divided into equal parts for you.


3 Write greater than ( $>$ ) or less than ( $<$ ) to show which fraction is greater. If they are equal, write an equal sign ( $=$ ).

| ex a $\frac{1}{4}<\frac{1}{2}$ | ex b $\frac{1}{2}>\frac{1}{3}$ | a $\frac{4}{6}$ | $\frac{2}{3}$ |  |  |
| :--- | :--- | :--- | :--- | :--- | :---: |
| b $\frac{1}{3}$ | $\frac{1}{4}$ | c $\frac{3}{4}$ | $\frac{5}{6}$ | d $\frac{1}{3}$ | $\frac{3}{4}$ |
| e $\frac{1}{2}$ | $\frac{2}{4}$ | ff $\frac{2}{3}$ | $\frac{3}{4}$ | S $\frac{2}{6}$ | $\frac{1}{3}$ |

$\qquad$

## More Egg Carton Fractions

1 Write at least two fractions to show the part of each egg carton that is filled. Draw lines on the egg cartons to divide them into equal parts.
cexamples)

2 Fractions can be greater than one. If a fraction greater than one is writtten as a whole number with a fraction, it is called a mixed number. If it is written as a fraction, it is called an improper fraction. Draw on the egg cartons to divide them into equal parts. Then write a mixed number and an improper fraction to show how many full egg cartons there are.

| Egg Carton | Mixed Fraction | Improper Fraction |
| :--- | :--- | :--- | :--- | :--- |
| example |  |  |

$\qquad$
$\qquad$

## Comparing \& Ordering Fractions

1 Write the fractions below in order from least to greatest. You can use the egg cartons to help compare the fractions. Hint: First figure out which fractions are greater than 1.


| $\frac{1}{2}$ | $\frac{5}{3}$ | $\frac{3}{4}$ | $\frac{1}{3}$ | $\frac{7}{4}$ | $\frac{2}{3}$ | $\frac{3}{2}$ | $\frac{1}{4}$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |

$\overline{\text { Least }}$ — - - - $-\overline{\text { Greatest }}$

2 Fill in the missing fractions or whole numbers on the number line.


3 Fill in the missing fractions or whole numbers on the number line.


## CHALLENGE

4 Which fraction is greater, $\frac{3}{4}$ or $\frac{8}{9}$ ? How do you know?

5 Which fraction is greater, $\frac{5}{4}$ or $\frac{10}{9}$ ? How do you know?
$\qquad$
$\qquad$

## Fractions \& Mixed Numbers on a Number Line

1 Use the number line to answer the questions below.


| example a What improper fraction is equal to $2 \frac{1}{4}$ ? In other <br> words, how many fourths are in two and one-fourth? | $\frac{9}{4}$ |
| :--- | :---: |
| example b What number is halfway between 2 and 3? | $2 \frac{1}{2}$ |
| a What improper fraction is equal to $1 \frac{1}{2}$ ? In other words, how <br> many halves are in one and one-half? |  |
| b What mixed number is equal to $\frac{6}{4}$ ? |  |
| C Which is greater, $\frac{5}{4}$ or $1 \frac{1}{2}$ ? |  |
| d What mixed number is equal to $\frac{13}{4}$ ? |  |
| e What improper fraction is equal to $2 \frac{1}{2}$ ? In other words, how <br> many halves are in two and one-half? |  |
| f Which is greater, $1 \frac{3}{4}$ or $\frac{8}{4}$ ? |  |

## CHALLENGE

2 What number is halfway between 0 and 1?

3 What number is halfway between 0 and 3?

4 What number is halfway between 0 and 17?

## Fraction Story Problems

Draw pictures to help answer the questions below. Circle your answer to each question.
1 Jim had a piece of string that was three-fourths of a foot long. Damien had a piece of string that was half a foot long. Whose string was longer? How much longer was it? Use a labeled sketch, as well as numbers and/or words, to prove your answer.

2 Rosa and Jasmine were trying to run a kilometer ( 1 kilometer is equal to 1000 meters). Rosa made it halfway. Jasmine made it one-third of the way. Who ran farther? Use a labeled sketch, as well as numbers and/or words, to prove your answer.

## CHALLENGE

3 Lisa and her brother Darius were eating small pizzas. Their mom cut each pizza into fourths. Lisa figured out that she ate one and a half little pizzas. Darius counted that he ate seven fourths. Who ate more pizza? How much more? Use a labeled sketch, numbers, and/or words to prove your answer.

$\qquad$
$\qquad$

## Clock Fractions

Sometimes people talk about time in fractions of an hour. For example, a quarter of an hour is 15 minutes. Half an hour is 30 minutes. The pictures below show some different fractions of an hour on clocks.

$\frac{1}{2}$ hour is 30 minutes

$\frac{1}{4}$ hour is 15 minutes

$\frac{1}{3}$ hour is 20 minutes

1 Problem 2 will be easier if you can divide 60 by some other numbers. Solve the division problems below.
a $60 \div 2=$ $\qquad$ b $60 \div 3=$ $\qquad$ C $60 \div 4=$ $\qquad$ d $60 \div 6=$
$\qquad$

2 Draw the following fractions on the clocks. Then write how many minutes are in each fraction of an hour.

| Fractions of an Hour | Picture on a Clock | How Many Minutes? |
| :---: | :---: | :---: |
| a $\frac{3}{4}$ |  |  |
| $b$ $\frac{2}{3}$ |  |  |
| C $\frac{1}{6}$ |  |  |

$\qquad$
$\qquad$

## Time \& Fractions

1 Use the clocks below to help answer the questions. Show all your work and circle your answers.
a Hiroko spent half an hour on her homework. Her sister Mai spent four-sixths of an hour on her homework. Who spent more time doing homework?

b The sisters started doing their homework at 4:45 in the afternoon. What time did Hiroko finish?


C What time did Mai finish?

## CHALLENGE

2 It takes Ashley's family five-thirds of an hour to drive to her grandmother's house. It takes them eleven-sixths of an hour to drive to her aunt's house. Which drive takes more time for Ashley's family? How much more time? Show your work.

$\qquad$
$\qquad$

## Multiplication Tables

1 Complete the multiplication tables below.

$b$

| $\times$ | 5 | 2 | 9 | 3 | 8 | 6 | 7 | 4 |
| :---: | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 4 |  |  |  |  |  |  |  |  |

C

| $\times$ | 5 | 2 | 9 | 3 | 8 | 6 | 7 | 4 |
| :---: | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 8 |  |  |  |  |  |  |  |  |

2 Solve the division problems below.

$$
40 \div 5=
$$

$27 \div 3=$ $\qquad$
$16 \div 4=$ $\qquad$
$20 \div 5=$ $\qquad$
$64 \div 8=$ $\qquad$
$32 \div 4=$ $\qquad$
$18 \div 6=$ $\qquad$
$9 \div 3=$ $\qquad$

## CHALLENGE

3 Write an even three-digit number with:

- an odd number in the tens place
- an odd number in the hundreds place that is less than the number in the tens place
- a number greater than 5 in the ones place

4 What is 2 times the number you wrote above?
$\qquad$
$\qquad$

## Fractions \& Division

1 Sometimes the answer to a division problem is a fraction. Complete the table below.

| Divide the circle into this <br> many equal pieces | Draw on this cirlce | Complete the <br> division equation |
| :--- | :--- | :--- |
| example 3 |  | $1 \div 3=\ldots \frac{1}{3}$ |
| a 2 |  | $1 \div 4=$ |
| b 4 |  | $1 \div 6=$ |
| C 6 |  |  |

2 Larissa and her two friends bought a giant cookie. They cut it into equal parts so that they each got the same amount. How much of the cookie did each friend get? Draw and label a picture to show your answer.

3 The next day Larissa and her 2 friends bought 4 cookies. If they shared them equally, how much did each friend get? Draw and label a picture to show your answer.
$\qquad$
$\qquad$

## More Multiplication Tables

1 Fill in the missing numbers.
$\begin{array}{r}8 \\ \times \quad 4 \\ \hline \square \\ \hline\end{array}$


$\begin{array}{r}8 \\ \times \square \\ \hline 56\end{array}$


2 Complete the multiplication tables below.

| ex | $\mathbf{x}$ | 5 | 2 | 9 | 3 | 8 | 6 | 7 | 4 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\mathbf{2}$ | 10 | 4 | 18 | 6 | 16 | 12 | 14 | 8 |

a

| $x$ | 5 | 2 | 9 | 3 | 8 | 6 | 7 | 4 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 10 |  |  |  |  |  |  |  |  |

$b$

| $x$ | 5 | 2 | 9 | 3 | 8 | 6 | 7 | 4 |
| :---: | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 5 |  |  |  |  |  |  |  |  |


| $\times$ | $x$ | 5 | 2 | 9 | 3 | 8 | 6 | 7 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 9 |  |  |  |  |  |  |  |  |

## CHALLENGE

3 Use what you know about multiplying by 10 to help solve these problems.

| 12 | 12 | 12 | 18 | 18 |
| ---: | ---: | ---: | ---: | ---: |
| $\times 10$ | $\times 5$ | $\times 9$ | $\times 10$ | $\times 5$ |

## Classroom Groups

1 Mrs. Larsen has 20 little erasers. She wants to divide the erasers evenly among the 6 students in her reading group. How many erasers will each student get? Show all your work.

2a The teacher wanted his class to work in groups of 4. After he divided them into groups, there were 6 groups of 4 and 1 group of 3 . How many students were in the class? Show all your work.

## CHALLENGE

$\mathbf{b}$ If the teacher wanted all the groups to be exactly the same size, how many students should be in each group? How many small groups would there be? Show all your work.
$\qquad$
$\qquad$

## Fractions of an Hour

Complete the table.

| Fractions of an Hour | Picture on a Clock | How Many Minutes? |
| :---: | :---: | :---: |
| example $\frac{1}{4}$ |  | 15 minutes |
| 1 |  |  |
| $2$ $\frac{3}{4}$ |  |  |
| 3 |  |  |
| 4 |  |  |

## More Time \& Distance Problems

1 Mr. Jackson stayed for an hour after school to help his students with their math homework. Four students came in for help. If Mr. Jackson spent the same amount of time helping each student and used up the whole hour, how much time did he spend with each student? Express your answer both as a fraction of an hour and as a number of minutes. Show your work.

Mr. Jackson spent $\qquad$ of an hour with each student.

Mr. Jackson spent $\qquad$ minutes with each student.

2 A very slow snail crawls at a rate of 12 feet per hour. If the snail crawls for 45 minutes, how far will she get? Show your work.
$\qquad$
$\qquad$

## Fractions \& Division Tables



1 Write a greater than (>), less than (<), or equal sign in the circle to complete each number sentence below. Use the number line to help figure out which fraction is greater.

| ex $\frac{1}{4}<\frac{1}{2}$ | a $\frac{3}{4}$ | $\frac{5}{6}$ | b $\frac{2}{3}$ | $\frac{4}{6}$ |  |
| :--- | :--- | :--- | :--- | :---: | :---: |
| C $\frac{5}{3}$ | $\frac{5}{4}$ | d $\frac{2}{3}$ | $\frac{3}{2}$ | e $\frac{1}{3}$ | $\frac{3}{6}$ |

2 Complete the division tables below.

| ex | $\div$ | 10 | 4 | 18 | 6 | 16 | 12 | 14 | 8 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2 | 5 | 2 | 9 | 3 | 8 | 6 | 7 | 4 |
| a | $\div$ | 70 | 90 | 20 | 80 | 30 | 50 | 60 | 40 |
|  | 10 | 7 |  |  |  |  |  |  |  |
| $b$ | $\div$ | 15 | 30 | 35 | 25 | 10 | 45 | 20 | 40 |
|  | 5 | 3 |  |  |  |  |  |  |  |
| C | $\div$ | 8 | 20 | 16 | 36 | 24 | 28 | 12 | 32 |
|  | 4 | 2 |  |  |  |  |  |  |  |

$\qquad$

## Sharing Problems

1 Kendra and Veronica's aunt gave them $\$ 19$ to spend at the store. If they split the money evenly, how much did they each get to spend? Use labeled sketches, numbers, and/or words to solve this problem. Show all your work.


2 Frank had 42 shells that he wanted to share with his 4 friends. If he gave each friend the same number of shells (and kept the same number of shells for himself), how many shells did each person get? Use labeled sketches, numbers, and/ or words to solve this problem. Show all your work.


## CHALLENGE

3 Joe's grandma lives 36 blocks up the street from Joe. On Saturday, Joe rode his bike two-thirds of the way to his grandma's house and then realized he forgot the present he was going to give her. Joe rode back to his house, got the present, and rode all the way to his grandma's house. Then he rode straight home. How many blocks did Joe ride altogether? Use labeled sketches, numbers, and/or words to solve this problem. Show all your work.

$\qquad$

## Division Tables \& Equivalent Fractions

1 Complete the division tables below.

| ex | $\div$ | 10 | 4 | 18 | 6 | 16 | 12 | 14 | 8 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2 | 5 | 2 | 9 | 3 | 8 | 6 | 7 | 4 |
| a | $\div$ | 8 | 32 | 12 | 16 | 36 | 28 | 24 | 20 |
|  | 4 | 2 |  |  |  |  |  |  |  |



2 Write at least two fractions to show how much of each egg carton is filled.
example

## Packages \& Pizzas

1 Brandon was buying muffins for his family to eat for breakfast. There were 6 muffins in each package. Brandon wanted to get 18 muffins. How many packages did he need to buy? Use labeled sketches, numbers, and/or words to solve this problem. Show all your work.


2 Mrs. Ramos is buying tennis balls for the students in her class to play with. She wants every student to have his or her own tennis ball. There are 3 tennis balls in each package, and there are 28 students in the class. How many packages does Mrs. Ramos need to buy? Use labeled sketches, numbers, and/or words to solve this problem. Show all your work.

3 The football team went out to eat after the game. The players sat at 4 tables. The coach ordered 9 pizzas. If each table got exactly the same amount of pizza, how many pizzas did each table get? Use labeled sketches, numbers, and/or words to solve this problem. Show all your work.

$\qquad$
$\qquad$

## Multiplying by $10,100 \& 1,000$

1 Multiply by 10, 100, and 1,000. Some of the problems below are already done for you as examples.

| $\begin{array}{r}10 \\ \times 3 \\ \hline\end{array}$ | $\begin{array}{r}10 \\ \times 5 \\ \hline\end{array}$ | $\begin{array}{r}10 \\ \times 7 \\ \hline\end{array}$ | 100 $\times \quad 2$ | $\begin{array}{r}100 \\ \times \quad 4 \\ \hline\end{array}$ | $\begin{array}{r}100 \\ \times \quad 9 \\ \hline\end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | $\times 2$ |  |  |
| 30 |  |  | 200 |  |  |
| 1,000 | 1,000 | 1,000 | 10 | 1,000 | 100 |
| 1000 $\times 2$ | $\times 7$ | $\times 6$ | $\times 9$ | $\times 5$ | $\times 3$ |
| 2,000 |  |  |  |  |  |

2 Fill in the missing numbers.


## Money \& Minutes

1 Brianna earns $\$ 1,000$ per month at her job. She used to make $\$ 800$ per month. If she works only for the months of June, July, and August, how much money will she make?
a Restate the question in your own words:
b Underline the information in the problem you do need to solve the problem.
C Cross out the information in the problem you don't need to solve the problem.
d Solve the problem. Show all your work.

2 Jonah is 18 years old. It takes him 50 minutes to ride his bike to work and 50 minutes to ride his bike home every day. If he worked 6 days last week, how many minutes did he spend riding his bike to and from work?
a Restate the question in your own words:
$\mathbf{b}$ Underline the information in the problem you do need to solve the problem.
C Cross out the information in the problem you don't need to solve the problem.
d Solve the problem. Show all your work.
e How many hours did Jonah spend riding his bike to and from work? Show your work.

## Writing Improper Fractions as Mixed Numbers

1 Complete the multiplication facts.

| 5 | 5 | 50 | 50 |
| :---: | :---: | :---: | :---: |
| $\times 7$ | $\times 70$ | $\times 7$ | $\times 70$ |
| 4 | 4 | 40 | 40 |
| $\times 3$ | $\times 30$ | $\times 3$ | $\times 30$ |
| 8 | 8 | 80 | 80 |
| $\times 7$ | $\times 70$ | $\times 7$ | $\times 70$ |

2 Write each fraction as a whole number or a mixed number. Some of the problems are done for you as examples. You can draw on the egg cartons to help.

$\frac{3}{3}=$ $\qquad$
$\frac{6}{3}=$ $\qquad$
$\frac{4}{3}=$ $\qquad$ $\frac{5}{3}=$ $\qquad$ $\frac{7}{3}=\quad 2 \frac{1}{3}$
$\frac{6}{6}=$ $\qquad$ $\frac{12}{12}=$ $\qquad$ $\frac{18}{12}=$ $\qquad$
$\frac{6}{6}=$ $\qquad$

$$
\frac{12}{6}=
$$

$\qquad$
$\frac{8}{6}=$
$\qquad$ $\frac{9}{6}=$ $\qquad$
$\qquad$
$\frac{8}{4}=$ $\qquad$
$\frac{15}{4}=$ $\qquad$ $\frac{36}{4}=$ $\qquad$

## Area Problems

1 Frank bought a rug for his room. It is 60 inches by 40 inches. What is the total area of the rug in square inches? Use labeled sketches, numbers, and/or words to solve this problem. Show all your work.

2 The school gym is 80 feet by 50 feet. What is the total area of the gym floor in square feet? Use labeled sketches, numbers, and/or words to solve this problem. Show all your work.

## CHALLENGE

3 Lisa's room is 90 inches by 90 inches. She bought a rug for her floor that is 50 inches by 40 inches. How much of her floor is not covered by the rug? Use labeled sketches, numbers, and/or words to solve this problem. Show all your work.
$\qquad$
$\qquad$

## Multiplication \& Division Puzzles

1 Fill in the missing numbers.
$\begin{array}{r}7 \\ \times \square \\ \hline 4 \quad 2\end{array}$


2 Use multiplication and division to find the secret path through each maze. The starting and ending points are marked for you. You can only move one space up, down, over, or diagonally each time. Write four equations to explain the path through the maze.


## CHALLENGE

3 Complete the division table below.

| $\div$ | 600 | 240 | 120 | 180 | 540 | 5,400 | 1,800 | 1,200 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 60 |  |  |  |  |  |  |  |  |

$\qquad$

## Using Partial Products to Solve Multiplication Problems

Use partial products to solve each multiplication problem below.

| Fill in the array to show the partial products. | Use numbers to show your work. |
| :---: | :---: |
| example | $\begin{aligned} & 23 \\ & 6 \times 20=\begin{array}{r} \frac{2}{4} \\ 6 \times 3 \end{array}=\frac{+18}{138} \end{aligned}$ |
| $1$ | $\begin{array}{r} 24 \\ \times 7 \end{array}$ |
| $2$ | $\begin{array}{r} 36 \\ \times \quad 6 \\ \hline \end{array}$ |
| $3$ | $\begin{array}{r} 47 \\ \times \quad 4 \\ \hline \end{array}$ |

$\qquad$

## Greater Than \& Less Than

Problem and picture of the fraction $\quad$ Name of the fraction

Use the following information to complete the items below.

Problem and picture of the fraction
than $1 \frac{1}{3}$ and less than $1 \frac{3}{4}$. Name of the fraction
$\qquad$
$\qquad$

## Using the Standard Multiplication Algorithm

1 Use the standard algorithm to solve each multiplication problem.

| $\begin{aligned} & 2 \\ & \hline \text { ex } \begin{array}{r} 34 \\ \times \quad 7 \\ \hline 238 \end{array} \end{aligned}$ | a | $\begin{array}{r} 43 \\ \times \quad 6 \end{array}$ | b | $\begin{array}{r} 28 \\ \times \quad 4 \\ \hline \end{array}$ | C | $\begin{array}{r} 59 \\ \times \quad 4 \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| d $\begin{array}{r} 37 \\ \times \quad 3 \end{array}$ | e | $\begin{array}{r} 84 \\ \times \quad 3 \end{array}$ | f | $\begin{array}{r} 33 \\ \times \quad 8 \end{array}$ | 5 | $\begin{array}{r} 68 \\ \times \quad 5 \end{array}$ |

2 Solve the problems below using the standard algorithm. Show your work.


CHALLENGE

$\qquad$
$\qquad$

## Two Different Multiplication Methods

1 Solve each problem below. Use the standard algorithm at least two times. Use the partial products method at least two times.

| ex $\mathbf{a}$ standard algorithm $\begin{array}{r} 12 \\ 135 \\ \times \quad 4 \\ \hline 540 \end{array}$ | ex $\mathbf{b}$ partial product $\begin{array}{r} 135 \\ \times \quad 4 \\ 4 \times 100=400 \\ 4 \times 30=120 \\ 4 \times 5=+\quad 20 \\ \hline 540 \end{array}$ | a | $\begin{array}{r} 28 \\ \times \quad 8 \end{array}$ | $b$ | $\begin{array}{r} 47 \\ \times \quad 5 \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{array}{r}56 \\ \times \quad 3 \\ \hline\end{array}$ | d $\begin{array}{r} 321 \\ \times \quad 7 \\ \hline \end{array}$ | e | $\begin{array}{r} 482 \\ \times \quad 6 \\ \hline \end{array}$ | f | $\begin{array}{r} 259 \\ \times \quad 3 \\ \hline \end{array}$ |

2 Ramon bought 8 big cases of breakfast cereal. Each case held 12 boxes of cereal. Each box of cereal held 18 oz. of cereal. How many boxes of breakfast cereal did Ramon buy?
a Restate the question in your own words:
b Underline the information in the problem you do need to solve the problem.
C Cross out the information in the problem you don't need to solve the problem.
d Solve the problem. Show all your work.
$\qquad$

## Kylie's Babysitting Money

1 Kylie earns \$8 an hour babysitting. She babysat 21 hours last month. This month, she babysat 17 hours more than last month. How much more money did she earn this month?
a Restate the question in your own words:
b Underline the information in the problem you do need to solve the problem.
C Cross out the information in the problem you don't need to solve the problem.
d Solve the problem. Show all your work.

CHALLENGE
2 If Kylie wants to earn $\$ 256$ next month, how many hours will she need to work? Show all your work.

$\qquad$
$\qquad$

## More Partial Products

Use partial products to solve each multiplication problem below.

$\qquad$

## Toothpicks \& Leaves

1 Last year, there were 26 students in Mrs. Coleman's class. This year, there are 28 students in her class. The 28 students are doing an art project, and every student needs 17 toothpicks. How many toothpicks will they need altogether?
a Restate the question in your own words:
b Underline the information in the problem you do need to solve the problem.
C Cross out the information in the problem you don't need to solve the problem.
d Solve the problem. Show all your work.

2 Leo is 11 years old. His neighbors pay him $\$ 12$ to rake the leaves in their yards. He raked 23 yards in October and 15 yards in November. How much money did he earn in those two months?
a Restate the question in your own words:
b Underline the information in the problem you do need to solve the problem.
C Cross out the information in the problem you don't need to solve the problem.
d Solve the problem. Show all your work.
$\qquad$
$\qquad$

## Reasonable Estimates \& Partial Products

1 Fill in the bubble to show the most reasonable estimate for each multiplication problem.

| $\mathbf{a} 23 \times 21$ | $\bigcirc 400$ | $\bigcirc 600$ | $\bigcirc 4,000$ | $\bigcirc 6,000$ |
| :--- | :---: | :---: | :---: | :---: |
| $\mathbf{b} 31 \times 19$ | $\bigcirc 600$ | $\bigcirc 700$ | $\bigcirc 6,000$ | $\bigcirc 7,000$ |
| $\mathbf{c} 312 \times 18$ | $\bigcirc 600$ | $\bigcirc 800$ | $\bigcirc 6,000$ | $\bigcirc 10,000$ |
| $\mathbf{d} 96 \times 33$ | $\bigcirc 270$ | $\bigcirc 1,000$ | $\bigcirc 3,000$ | $\bigcirc 27,000$ |

2 Use partial products to solve each problem below. Draw lines between the digits to show which numbers you multiplied.

| $\text { ex } \begin{aligned} & \text { M } \\ & \times 1 \\ & \times 21 \\ & 20 \times 60=1,200 \\ & 20 \times 3=60 \\ & 1 \times 60=60 \\ & 1 \times 3=\frac{+3}{1,323} \end{aligned}$ | a | $\begin{array}{r} 27 \\ \times \quad 46 \end{array}$ | $b$ | $\begin{array}{r} 36 \\ \times \quad 43 \end{array}$ |
| :---: | :---: | :---: | :---: | :---: |
| C $\begin{array}{r} 29 \\ \times \quad 67 \end{array}$ | d | $\begin{array}{r} 37 \\ \times \quad 59 \end{array}$ | e | $\begin{array}{r} 47 \\ \times \quad 56 \end{array}$ |

$\qquad$

## Multiplication Story Problems

1 At the beginning of the school year, there were 28 desks in each classroom. There were 26 classrooms. How many desks were in the school altogether? Show all your work.

2 Jerome does 125 sit-ups every day. How many sit-ups will he do in 2 weeks? Show all your work.

3 The movie theater in our town has 2 aisles and 3 blocks of seats. Two blocks of seats each have 24 rows of 7 seats. The middle block of seats has 24 rows of 14 seats. How many seats are in the theater altogether? Show all your work.

$\qquad$
$\qquad$

## Multiplication Round \& Check

1 Multiply the numbers.

| 20 | 30 | 30 | 40 | 50 | 100 | 100 |
| ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| $\times 10$ |  |  |  |  |  |  |
| $\times 10$ | $\times 20$ | $\times 10$ | $\times 10$ | $\times 20$ | $\times 30$ | $\times 30$ |

2 Think about rounding to estimate the answers to the problems below. Then rewrite each problem vertically and solve it using the standard algorithm. Hint: Use the answers above to help with your estimates.

| Problem | ex $39 \times 9$ | a $41 \times 9$ | b $32 \times 9$ | C $12 \times 18$ |
| :---: | :---: | :---: | :---: | :---: |
| Estimate | 400 |  |  |  |
| Solution | $\begin{array}{r} 8 \\ 39 \\ \times 9 \\ \hline 351 \end{array}$ |  |  |  |
| Problem | d $28 \times 18$ | e $33 \times 22$ | f $103 \times 18$ | $\text { S } 123 \times 32$ |
| Estimate |  |  |  |  |
| Solution |  |  |  |  |

## Cherry Tomatoes \& Cafeteria Tables

1 Farmer Sara drives 32 miles each week to take baskets of vegetables to her customers. She put 16 cherry tomatoes into each basket. She filled 23 baskets. How many cherry tomatoes did she use altogether?
a Restate the question in your own words:
b Underline the information in the problem you do need to solve the problem.
C Cross out the information in the problem you don't need to solve the problem.
d Solve the problem. Show all your work.

2 There are 24 tables in the cafeteria, and each table seats 17 students. The cafeteria serves lunch from 11:45 am until 12:25 pm. How many students can sit in the cafeteria at a time?
a Restate the question in your own words:
b Underline the information in the problem you do need to solve the problem.
C Cross out the information in the problem you don't need to solve the problem.
d Solve the problem. Show all your work.
$\qquad$

## Using the Standard Algorithm \& Partial Products to Multiply

1 Solve these multiplication problems.

| 30 | 40 | 40 | 200 | 200 |
| ---: | ---: | ---: | ---: | ---: |
| $\times 30$ | $\times 30$ | $\times 40$ | $\times 20$ | $\times 30$ |

2 Solve these multiplication problems. Use the standard algorithm to solve two of them. Use partial products to solve the other two. Hint: Use the answers above to make sure your answers are reasonable.

| $\begin{gathered} \text { ex a Standard Algorithm } \\ 21 \\ \mathbf{8 x} \\ 184 \\ \times 36 \\ \hline 1,104 \\ +5,520 \\ \hline 6,624 \end{gathered}$ | ex b Partial Products $\begin{aligned} & 63 \\ & 1 \times 1 \\ & \times 21 \\ & 20 \times 60=1,200 \\ & 20 \times 3= 60 \\ & 1 \times 60=60 \\ & 1 \times 3=+\quad 3 \\ & 1,323 \end{aligned}$ |
| :---: | :---: |
| a $\begin{array}{r} 36 \\ \times \quad 29 \end{array}$ | b $\begin{array}{r} 43 \\ \times \quad 38 \end{array}$ |
| C $\begin{array}{r} 186 \\ \times \quad 22 \end{array}$ | $\begin{array}{r} \mathbf{d} \\ \\ 207 \\ \times \quad 35 \\ \hline \end{array}$ |

## Raffle Tickets \& Exercise Minutes

1 The middle school was giving away raffle tickets at Back to School Night. There were 48 classrooms altogether and 896 students at the school. Each classroom got a bundle of 108 tickets to give away. How many tickets did the classrooms get altogether?
a Restate the question in your own words:
b Underline the information in the problem you do need to solve the problem.
C Cross out the information in the problem you don't need to solve the problem.
d Solve the problem. Show all your work.

2 Deja exercises four days a week at the gym. The gym is 7 blocks away from her house. Each time, she spends 45 minutes exercising. If she does this for 13 weeks, how much time will she spend exercising altogether?
a Restate the question in your own words:
b Underline the information in the problem you do need to solve the problem.
C Cross out the information in the problem you don't need to solve the problem.
d Solve the problem. Show all your work.

e Show your answer from part din hours and minutes.

## Using the Standard Algorithm to Multiply Large Numbers

1 Solve these multiplication problems.

| 80 | 80 | 80 | 600 | 600 |
| ---: | ---: | ---: | ---: | ---: |
| $\times 60$ | $\times 70$ | $\times 80$ | $\times 10$ | $\times 20$ |

2 Solve these multiplication problems using the standard algorithm. Use the answers above to make sure your answers are reasonable.

| example | a |
| :---: | :---: |
| $\begin{aligned} & 21 \\ & 58 \end{aligned}$ $184$ |  |
| $\times 36$ |  |
| $\begin{array}{r} 1,104 \\ +5,520 \\ \hline \end{array}$ |  |
| 6,624 |  |
| $b$ | C |
| 80 | 78 |
| $\times 72$ | $\times 59$ |
| d $\begin{array}{r} \\ 587 \\ \times 13 \\ \hline\end{array}$ | e |
|  | 602 |
|  | $\times 26$ |

## Bread \& Paper

1 Five days a week, Marion bakes eight dozen loaves of bread and delivers them to 3 sandwich shops. Each shop gets the same number of loaves. In 3 weeks, how many loaves of bread does each sandwich shop get from Marion? Show all your work.

## CHALLENGE

2a A piece of paper measures 36 inches by 24 inches. The teacher wants to cut the paper into 9 equal pieces for her students. The dimensions of the 9 pieces of paper must be whole numbers of inches. What could the dimensions of the 9 identical pieces of paper be? There are two possibilities. Use labeled sketches, numbers, and/or words to solve this problem. Show all your work.
b What must the area of each of the 9 pieces of paper be? Use pictures, numbers, and/or words to explain your answer.
$\qquad$
$\qquad$

## More Fractions \& Division

1 Write a fraction to show how much of each circle is filled in.
example

2 Solve the following division problems. The answers can help you with problem 3.

$$
24 \div 2=
$$

$24 \div 4=$ $\qquad$
$24 \div 8=$ $\qquad$
$24 \div 3=$ $\qquad$
$240 \div 2=$ $\qquad$
$240 \div 4=$ $\qquad$
$240 \div 8=$ $\qquad$
$240 \div 3=$ $\qquad$

3 You can use what you know about division to find different fractions of a number. example Half of 24 is $\qquad$ 12 .
a One-third of 24 is $\qquad$ .
b One-eighth of 24 is $\qquad$ .

C One-fourth of 24 is $\qquad$ .
d One-third of 240 is $\qquad$ .
e Half of 240 is $\qquad$ .
f One-eighth of 240 is $\qquad$ .

5 One-fourth of 240 is $\qquad$ .

## CHALLENGE

h Three-fourths of 24 is $\qquad$ .
i Two-thirds of 240 is $\qquad$ .

## Favorite Fruit Graph

The people working in the cafeteria wanted to know what fruit students like best. They asked the 240 students in the school to pick their favorite fruit. The results are shown on the circle graph below.

1 Which was the most popular fruit?

2 Did more students select peaches or apples?

3 Which two fruits are favored by the same number of students?
Students' Favorite Fruit

4 Exactly half of the students said watermelon was their favorite fruit. What number of students said watermelon was their favorite fruit? (There are 240 students altogether.) Show your work.

5 Exactly one-fourth of the students said peaches were their favorite fruit. What number of students said peaches were their favorite fruit? Show your work.

6 Exactly one-eighth of the students said strawberries were their favorite fruit. What number of students said strawberries were their favorite fruit? Show your work.
$\qquad$
$\qquad$

## Spinner, Tile \& Marble Fractions

1 What fraction of each spinner is shaded in?


2 What fraction of the tile in each collection are gray? Some collections have 8 tile, and some have 6 tile.


3 What fraction of the marbles in each collection are black?

| $\text { ex } \quad \frac{2}{7}$ | $b$ | c | d |
| :---: | :---: | :---: | :---: |
| $-0,000$ | $-0.000$ | $-0,00$ | -80-600 |

$\qquad$

## Probability Experiments

1 Chris is going to close his eyes, reach into this bowl, and pull out just 1 tile. What is the probability that it will be gray?


2 Chris is going to close his eyes, reach into a bowl with 240 tile, and pull out just 1 tile. If 120 of those tile are gray, does he have a better or worse chance of getting a gray tile than he did with the small bowl above? Explain your answer.

3 Jackie is going to close her eyes, reach into this bag, and pull out just 1 marble. What is the probability that it will be black?


## CHALLENGE

4a Jackie is putting together another bag of marbles. She wants the chances of drawing a black marble to be exactly the same as they were for the bag above. If she puts 20 marbles in the new bag, how many of them would need to be black? Explain your answer.
b If she puts 100 marbles in the new bag, how many of them would need to be black? Explain your answer.
$\qquad$
$\qquad$

## Eating Our Vegetables

1 Mrs. Watson's class is trying to eat more vegetables at lunch. This bar graph shows how many students in her class ate vegetables each day for a week.

Number of Students Eating Vegetables

a How many students does each box on the graph represent?
b How many students ate vegetables on Friday?

C How many students ate vegetables on Wednesday?
d There are 24 students in the class. On which day(s) did at least half of the class eat vegetables?

## CHALLENGE

e On which day did exactly twothirds of the class eat vegetables? Explain your answer.

## CHALLENGE

2 Two hundred forty students were asked to choose their favorite vegetable. This circle graph shows the results. Exactly one-fourth of the students picked peas, and exactly one-third picked carrots. How many students said broccoli was their favorite vegetable? Use 1abeled sketches, numbers, and/or words to explain your answer.

$\qquad$

## Fair Spinners

1a Amber and Brandon are going to play a game. They are using a spinner to see who gets to go first. If the spinner lands on A, Amber goes first. If the spinner lands on B, Brandon goes first. Circle the spinner that gives each player the same chance of going first.

b Brandon didn't think the spinners above were very interesting, so he made the spinner shown below. Is this spinner fair? Explain your answer.


2a Willie, Brett, and Rico are playing a game. They need to make a spinner to decide who gets a point each time. Willie gets a point if the spinner lands on white. Brett gets a point if the spinner lands on blue. Rico gets a point if the spinner lands on red. Sketch a spinner that would be fair for these 3 players. Then explain why it is fair.

b Sketch a different spinner that would be fair for the 3 players. Explain why it is fair.

$\qquad$
$\qquad$

## Multiplication \& Division Practice

1 Solve these multiplication problems using the standard algorithm.


2 Complete the following division facts.
$56 \div 7=$

$$
81 \div 9=
$$

$32 \div 4=$ $\qquad$
$42 \div 6=$ $\qquad$
$64 \div 8=$ $\qquad$
$35 \div 5=$ $\qquad$
$40 \div 5=$ $\qquad$
$21 \div 7=$ $\qquad$
$\qquad$

## CHALLENGE

3 Solve the following problems mentally. Use the facts above to help if you want to.
$81 \div 3=$ $\qquad$
$42 \div 3=$ $\qquad$ $64 \div 4=$ $\qquad$

## Area \& Perimeter, Time \& Money

1 Find the area and perimeter of this figure.
Show all of your work.


Area $\qquad$
Perimeter $\qquad$

2a Simon earns $\$ 24$ per hour. Raymond earns one-half that amount. Simon works 5 hours per day. If Raymond wants to earn the same amount of money as Simon, how many hours would he need to work each day? Show all your work.
b How much money does Simon make each day? Show all your work.
$\qquad$

## Prizes for Student Helpers

1 Mr. Murphy's students are going to win prizes for helping out around the school. He wants to find out what prizes his students like best so that he can buy them this weekend. The table below shows the results of his survey. Use the table to fill in the bar graph.

| Prize | Number of <br> Students |
| :---: | :---: |
| Binder | 9 |
| Mechanical <br> Pencil | 12 |
| Bouncy Ball | 6 |
| Eraser | 5 |


$\qquad$

## Probability Experiments with Tile \& Marbles

1a Esteban is going to close his eyes, reach into this bowl, and pull out one tile. What is the probability that the tile will be white?

b Esteban wants to fill the bowl with more tile but keep the probability of pulling out a white tile the same. If he puts 240 tile in the bowl, how many should be white? Explain your answer.

2 Solve the problems below and fill in the answers on the chart.

| Problem | Color in the marbles. | Number of Black Marbles |
| :---: | :---: | :---: |
| a Ling wants to make a collection of marbles where the chance of pulling out a black marble is $\frac{1}{3}$. Color in some of the 36 marbles to show how many should be black. | 000000000 000000000 000000000 $\bigcirc \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc$ |  |
| b Ling wants to change the collection of marbles so that it is twice as likely as it was with the collection above that she will pull out a black marble. Color in some of the 36 marbles to show how many should be black. | 000000000 <br> 000000000 <br> 000000000 <br> $\bigcirc \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc$ |  |
| C Ling wants to change the first collection of marbles so that the chances of pulling out a black marble are half what they were with the first collection. Color in some of the 36 marbles to show how many should be black. | 000000000 <br> 000000000 <br> 000000000 <br> $\bigcirc \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc$ |  |

NAME $\qquad$ DATE $\qquad$

## Calendar Problems

Use the calendars below to help solve the problems.

| February |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| sun | Mon | Tues | Wed | Thurs | Fri | sat |
| 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 |
|  |  |  |  |  |  |  |


| March |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Sun | Mon | Tues | Wed | Thurs | Fri | Sat |
| 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 |  |  |  |  |


| April |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| sun | Mon | Tues | wed | Thurs | Fri | sat |
|  |  |  | 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 |  |  |

1 Today is February 15. Hannah's birthday is on April 6. She told her teacher that her birthday is in about 5 weeks. Is that a good estimate? Explain your answer.

2 It takes 3 weeks for a video game to be mailed to Carlos. If he wants to get the video game in time for his brother's birthday on March 26, what is the last day he could order the video game and still get it in time?

3 Ling got a new puppy 26 days ago. Today is April 17. When did Ling get her puppy?

4 Bob says that he mailed a letter to his grandma about two weeks ago. Today is March 11. Fill in the bubble to show the date when Bob could have mailed the letter.

February 18
February 26March 4

## CHALLENGE

5 There are 31 days in the month of May. How many Sundays will there be in the May that comes after April shown above?
$\qquad$
$\qquad$

## Dos Bone Graph

A pictograph uses pictures or symbols to show numbers of things. A pet store owner used a pictograph to keep track of how many dog bones she sold each day. Use the pictograph to answer the questions below.

Number of Dog Bones Sold Each Day


1 How many bones does each bone picture stand for?

2 How many bones does each half-bone picture stand for?

3 On which day were the most bones sold?

4 How many bones were sold on Tuesday?

5 How many bones were sold altogether this week, from Monday to Friday? Show all your work.

## CHALLENGE

6 The pet store owner sold half as many dog bones last week as she did this week. How many bones were sold last week? (The pictograph shows the bones sold this week.) Show your work.
$\qquad$
$\qquad$

## Division \& Elapsed Time

1 Complete the following division facts.

| $32 \div 8=$ | $21 \div 3=$ | $18 \div 2=$ |
| :--- | :--- | :--- |
| $63 \div 7=$ | $16 \div 4=$ |  |
| $42 \div 6=$ | $40 \div 5=$ | $24 \div 6=\square$ |$\quad 48 \div 8=\square \quad 36 \div 4=\square$.

2 Show what time it will be an hour and a half from the time shown on the clock below.


3 On the digital clock, show what time it was twenty-five minutes before the time shown on the clock below.


4 The clocks below show when Darren started and stopped practicing his violin yesterday. How long did he spend practicing his violin yesterday?


5 The clocks below show when the fourth graders' music class starts and ends. How long is their music class?

starts

ends

## Estimating to Decide if Your Answer Is Reasonable

Making an estimate before solving a problem can help you decide if your answer is reasonable. Make an estimate, solve the problem, and then use your estimate to help decide if your answer makes sense.

1 The school got new dictionaries for the third, fourth, and fifth graders this year. They got 23 boxes, and there were 12 dictionaries in each box. How many dictionaries did they get altogether?
a Use rounding or another strategy to decide which estimate below is best. Circle the best estimate.
less than 200
dictionaries
about 2,000
dictionaries
more than 200
but less than 400
dictionaries
b Solve the problem. Show all your work.

C Is your answer reasonable? How can you tell?

2 Solve these multiplication problems.

| 2,000 | 300 | 300 | 4,000 |
| ---: | ---: | ---: | ---: |
| $\times \quad 14$ |  |  |  |
| $\times \quad 70$ |  |  |  |

$\qquad$
$\qquad$

## Multi-Digit Multiplication Practice

1 Solve these multiplication problems.

| 70 | 70 | 70 | 700 |
| ---: | ---: | ---: | ---: |
| $\times 30$ |  |  |  |
| $\times 40$ | $\times 50$ | $\times 30$ | $\times 40$ |

2 Solve these multiplication problems using the standard algorithm. Use the answers above to make sure your answers are reasonable.

| example | a |
| :---: | :---: |
| $\begin{aligned} & 21 \\ & \frac{88}{88} \\ & 184 \end{aligned}$ | 73 |
| $\times 36$ | $\times 52$ |
| $\begin{array}{r} 1,104 \\ +5,520 \\ \hline \end{array}$ |  |
| 6,624 |  |
| b | C |
| $\begin{array}{r} 68 \\ \times \quad 48 \end{array}$ | $\begin{array}{r} 67 \\ \times \quad 36 \end{array}$ |
| d | e |
| $\begin{array}{r} 703 \\ \times \quad 28 \end{array}$ | $\begin{array}{r} 689 \\ \times \quad 40 \end{array}$ |

$\qquad$

## Darryl's Present

Making an estimate before solving a problem can help you decide if your answer is reasonable. Make an estimate, solve the problem, and then use your estimate to help decide if your answer makes sense.

Darryl makes $\$ 12$ an hour. He wants to earn $\$ 180$ to buy a really nice present for his mom. He worked 3 hours last week and 5 hours this week. How many hours will he have to work next week in order to earn enough money to buy the present?

1 Use rounding or another strategy to make a reasonable estimate before you solve the problem.
a I know the answer will be greater than $\qquad$ .
b I know the answer will be less than $\qquad$ .

2 Solve the problem. Show all your work.

3 Is your answer reasonable? How can you tell?

$\qquad$

## Enough Information to Solve the Problem?

Read each story problem. Write yes or no to show whether there is enough information to solve the problem. If some information is missing, write what you would need to know to solve the problem.

| Problem | Is there enoush <br> information to solve <br> the problem? | If there is not enoush <br> information, what <br> information is missing? |
| :--- | :--- | :--- |
| $\mathbf{1}$ Cody wants to buy a new <br> pair of shoes that cost \$65. His <br> neighbors pay him to mow their <br> lawns. If he earns \$10 for each <br> lawn, will he have enough mon- <br> ey to buy the shoes this week? |  |  |
| 2 Jenna went to the store with <br> a \$10 bill. She bought 3 apples <br> that each cost $65 ¢$ and a carton <br> of milk that cost \$1.85. How <br> much change will she get back? |  |  |
| 3 There are 6 clusters of desks <br> and 22 students in Mr. Fletcher's <br> classroom. How many empty <br> seats are there in his classroom? |  |  |
| 4 Kiyoshi is making bags of art <br> supplies to give away as prizes <br> on Back to School Night. If he <br> puts 3 erasers in each bag, how <br> many bags can he fill? |  |  |
| $\mathbf{5}$ Salvador is making batches of <br> cookies. He baked 6 batches of <br> 8 cookies and a final batch of 4 <br> cookies. How many cookies did <br> he bake altogether? |  |  |

## Choosing a Strategy

Before you start working on a problem, it can help to decide what strategy you will use to solve it. Choose a strategy that will help you solve this problem. Explain your choice. Then solve the problem and double-check your answer.

1 A rectangle has a perimeter of 24 centimeters. It is 2 centimeters longer than it is wide. What is the width of the rectangle? What is the length of the rectangle?
a Fill in the bubble to show which strategy you will use to solve this problem.

O make an organized list
O look for a pattern
draw a picture
Ouse logical reasoning
b Explain why you chose this strategy.

C Solve the problem. Show all your work.
d Double-check your answer.
$\qquad$

## Find the Missing Information

Each problem below is missing some information that you need to solve it. For each problem, select the information you need to solve it. Then solve the problem.

1 Miguel is getting groceries. He got a loaf of bread, a carton of milk for \$2.50, and 3 apples that cost $60 \phi$ each. If he pays with a $\$ 10$ bill, how much change will he get back?
a Fill in the bubble beside the information you need to solve the problem.
The loaf of bread
The bread cost \$2.
Miguel is 11 years old. had 20 slices.
b Solve the problem. Show all your work.

2 Lisa wants to put carpet squares on the floor in her bedroom. Each carpet square covers 1 square foot, and they cost $\$ 5$ for a package of 4 squares. How much will it cost Lisa to buy enough carpet squares to cover her bedroom floor?
a Fill in the bubble beside the information you need to solve the problem.

Lisa has $\$ 200$ to spend.Lisa's room is
9 ft . by 11 ft .

The squares come in cases of 20 packages.
b Solve the problem. Show all your work.
$\qquad$

## Family Math Night

Making an estimate before solving a problem can help you decide if your answer is reasonable. Make an estimate, solve the problem, and then use your estimate to help decide if your answer makes sense.

1 Ms. Suarez and her students are hosting a math night for the students' families. They estimate that it will take them 20 minutes to set up, an hour and a half to do the activities, and 45 minutes to clean up. If they start setting up at 3:30 p.m., what time will they be done cleaning up?
a Use rounding or another strategy to make a reasonable estimate before you solve the problem.
b Solve the problem. Show all your work. You can use the blank clocks if you want to.


C Is your answer reasonable? How can you tell?
$\qquad$
$\qquad$

## Fractions \& Mixed Numbers

1 The circles below are divided into equal parts. Write two fractions to show what part of each circle is filled in.
example

2 The circles below are divided into equal parts. Write a fraction and a mixed number to show how many circles are filled in.

|  | Fraction | Mixed Number |  | Fraction | Mixed Number |
| :---: | :---: | :---: | :---: | :---: | :---: |
| example | $\frac{3}{2}$ | $1 \frac{1}{2}$ | a |  |  |
| $b$ |  |  | C |  |  |

3 Fill in the missing fractions or mixed numbers.

| Fractions | ex $\frac{5}{2}$ | a $\frac{9}{2}$ | b $\frac{9}{4}$ | c $\frac{14}{4}$ | d | e | f $\frac{62}{3}$ | $\mathbf{S}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Mixed Number | $2 \frac{1}{2}$ |  |  |  | $3 \frac{1}{2}$ | $2 \frac{3}{4}$ |  | $30 \frac{1}{3}$ |

$\qquad$

## Pizza Problems

1 The pizzas at Little Tom's are cut into 8 pieces. Lucy ate $\frac{1}{2}$ of a pizza and Alex ate $\frac{3}{8}$ of a pizza. Who ate more pizza? How much more? Use pictures, numbers, and/or words to explain how you know.


2 On Friday night, the Suarez family ate $2 \frac{3}{4}$ pizzas. Their neighbors, the Johnson family, ate $\frac{17}{8}$ of a pizza. Which family ate more pizza? How much more? Use pictures, numbers, and/or words to explain how you know.


## CHALLENGE

3 Which is greater, $\frac{82}{8}$ or $\frac{37}{4}$ ? Explain how you know. Hint: Think about how many eighths and how many fourths are in one whole.
$\qquad$
$\qquad$

## Using Fractions on a Number Line to Solve Problems



1 Use the number line above to help answer these questions.
a Celia ran $\frac{5}{6}$ of a mile. Jade ran $1 \frac{1}{4}$ mile. Who ran farther?
b Lester has a piece of rope that is $\frac{9}{6}$ of a foot long. Dario has a piece of rope that is $1 \frac{1}{3}$ of a foot long. Whose piece of rope is longer?

C Table A is $1 \frac{2}{3}$ of a yard long. Table B is $\frac{11}{6}$ of a yard long. Which table is longer?

2 Put the following fractions in order from smallest to greatest. Hint: Think about landmarks. Which fractions are less than one-half? Which fractions are close to 1?

| $\frac{1}{4}$ | $\frac{7}{6}$ | $\frac{3}{4}$ | $\frac{1}{2}$ | $\frac{1}{12}$ | $\frac{7}{8}$ |
| :--- | :--- | :--- | :--- | :--- | :--- |

Least

Greatest

3 Think about landmarks like one-half and one to compare the fractions below. Use a greater than $(>)$ or less than $(<)$ sign to compare them.

| ex $\frac{3}{4}$ | $>\frac{1}{3}$ | a $\frac{3}{6}$ | $\frac{3}{4}$ | b $\frac{5}{6}$ | $\frac{3}{4}$ | C $\frac{5}{6}$ | $\frac{2}{3}$ |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| d $\frac{5}{4}$ | $\frac{5}{6}$ | e $\frac{5}{4}$ | $\frac{4}{3}$ | f $\frac{11}{6}$ | $\frac{5}{3}$ |  | $\mathbf{S} \frac{10}{9}$ | $\frac{101}{100}$ |

$\qquad$

## Time Conversions

1 Fill in the following equivalencies for measurements of time.
a There are $\qquad$ seconds in 1 minute.
d There are $\qquad$ days in 1 week.
b There are $\qquad$ minutes in 1 hour.
e There are $\qquad$ days in 1 year.

C There are $\qquad$ hours in 1 day. f There are $\qquad$ weeks in 1 year.

2 How many seconds are in 1 hour? Show your work.

3 How many minutes are in 1 day? Show your work.

4 How many hours are in a day and a half? Show your work.

5 Today is Luis's birthday. He is turning 12 years old. How many days has it been since he was born? Show your work.

6 Today is also Luis's grandfather's birthday. He is turning 78 years old. How many days has it been since he was born? Show your work.
$\qquad$

## Showing Fractions in Simplest Form

1 Write all the factors of each number below. Think of the factors in pairs.
example 2 $\qquad$ a 4 $\qquad$ b 8
$\qquad$
C 3 $\qquad$ d 6
e 12 $\qquad$
2 Factors can help you think about equivalent fractions. When you can divide the numerator and the denominator by the same number, you can simplify a fraction. If you divide the numerator and denominator by the greatest factor they have in common (the greatest common factor), you can show the fraction in its simplest form. Look carefully at the example below. Then fill in the rest of the table.

| Fraction | Factors of <br> the Numerator <br> (top number) | Factors of the <br> Denominator <br> (bottom number) | Greatest <br> Common <br> Factor | Divide to Get the <br> Simplest Form | Picture and <br> Equation |
| :--- | :--- | :--- | :--- | :--- | :--- |
| ex |  |  |  |  |  |

## Weight Conversions

1 Fill in the following equivalencies for measurements of weight.
a There are $\qquad$ ounces in 1 pound. $\mathbf{b}$ There are $\qquad$ pounds in 1 ton.

2 Solve the problems below. Show all your work for each one.
a Ming has a very big cat that weighs 15 pounds. How many ounces does his cat weigh?
b Esperanza's baby sister weighs 11 and a half pounds. How many ounces does she weigh?

C Mr. Chang weighs 175 pounds. How many ounces does he weigh?
d An average male African elephant weighs 5 tons. How many pounds does it weigh?

## CHALLENGE

e How many ounces does an average male African elephant weigh?
f A blue whale can weigh up to $300,000 \mathrm{lbs}$. How many tons is that?
$\qquad$
$\qquad$

## Simplifying Fractions

1 When you can divide the numerator and the denominator by the same number, you can simplify a fraction. If you divide the numerator and denominator by the greatest factor they have in common (the greatest common factor), you can show the fraction in its simplest form. Look carefully at the example below. Then fill in the rest of the table.

| Fraction | Factors of the Numerator (top number) | Factors of the Denominator (bottom number) | Greatest Common Factor | Divide to Get the Simplest Form | Picture and Equation |
| :---: | :---: | :---: | :---: | :---: | :---: |
| ex <br> $\frac{4}{12}$ | 1,2,4) | 1,2,3,4.6,12 | 4 | $\frac{4}{12} \div 4$ |  |
| a <br> $\frac{9}{12}$ |  |  |  | $\frac{9}{12 \div}=$ | $\frac{9}{12}=$ |
| b <br> $\frac{10}{16}$ |  |  |  | $\frac{10 \div}{16 \div}=$ | $\frac{10}{16}=$ |

2 Use what you know about factors to write the fractions below in simplest form.

| ex $\frac{5}{15 \div 5} \div \frac{5}{\div}=\frac{1}{3}$ | $\mathbf{a} \frac{9 \div}{15 \div}=$ | $\mathbf{b} \frac{6 \div}{16 \div}=$ | $\mathbf{C} \frac{8 \div}{12 \div}=$ |
| :--- | :--- | :--- | :--- |

$\qquad$

## Capacity Conversions

1 Fill in the following equivalencies for measurements of capacity.
a There are $\qquad$ fluid ounces in 1 cup $\mathbf{b}$ There are $\qquad$ cups in 1 pint.

C There are $\qquad$ pints in 1 quart.
d There are $\qquad$ cups in 1 quart.
e There are $\qquad$ quarts in 1 gallon.
f There are $\qquad$ pints in 1 gallon.

2 Solve the problems below. Show all your work for each one.
a I have a full gallon of milk in my refrigerator. How many cups are in it?
b How many fluid ounces are in 1 gallon?


C Anthony's grandpa drives a semi truck for work. It has two gas tanks. Each gas tank holds 75 gallons of gasoline. How many quarts of gasoline does the truck hold altogether?
d How many fluid ounces of gasoline does the truck hold?

$\qquad$
$\qquad$

## Fraction Practice

1 Fill in the four missing numbers on the fraction number line below.


2 Use the number line above to help answer these questions.
a Alicia ran $10 \frac{2}{3}$ miles. Did she run closer to 10 miles or 11 miles?
b Erica ran $11 \frac{1}{4}$ miles. She said she ran about 12 miles. Was she accurate? Explain why or why not.

C Frank ran $10 \frac{2}{3}$ miles. Cameron ran $10 \frac{2}{4}$ miles. Who ran farther?

3 There are 4 fourths in 1 whole, so there are 40 fourths in 10 wholes. Therefore, we can say $\frac{4}{4}=1$ and $\frac{40}{4}=10$. Think about how many thirds and fourths are in a whole, and look at the number line above, to help fill in the blanks below.

$$
\begin{array}{rlrl}
\frac{44}{4} & =\begin{array}{lll}
11 & \frac{2}{2} & = \\
\frac{30}{3} & = & \frac{20}{2}
\end{array}=- \\
\frac{33}{2} & = & \frac{33}{3} & =\square
\end{array}
$$

4 Write the following fractions in simplest form.

| ex $\frac{12 \div 3}{15 \div 3}=\frac{4}{5}$ | a $\frac{6 \div}{21 \div}=$ | b $\frac{8 \div}{36 \div}=$ |
| :--- | :--- | :--- |

$\qquad$

## Length Conversions

1 Fill in the following equivalencies for measurements of length and distance.
a There are $\qquad$ inches in 1 foot.
b There are $\qquad$ feet in 1 yard.

C There are $\qquad$ inches in 1 yard.
d There are $\qquad$ feet in 1 mile.

2 Solve the problems below. Show all your work.
a The pool is 12 feet deep at its deepest part. How many inches deep is it?
b We run a 50 -yard-dash on Field Day. How many feet are in 50 yards?

C How many inches are there in 50 yards?
d The cross country team ran 8 miles for practice yesterday. How many feet did they run?

CHALLENGE
e About how many yards are there in a mile? Write your best estimate.
f Exactly how many yards are there in a mile? Show all your work.

$\qquad$
$\qquad$

## Decimals \& Fractions

1 Write the place value of the underlined digit in each number. The place values are spelled for you here:
hundreds tens ones tenths hundredths
example 2.03 hundredths
a 3.17
b 120.4
C 506.92
$\qquad$
d $54.2 \underline{9}$ $\qquad$ e 32.7 $\qquad$

2 Write each decimal number.
ex a Twenty-three and two-tenths: 23.2
ex $\mathbf{b}$ One hundred thirty and five-hundredths: $\qquad$
a Six and seven-hundredths: $\qquad$
b Two-hundred sixty-five and eight-tenths: $\qquad$

3 Write each fraction or mixed number as a decimal number.

| ex a $5 \frac{3}{10}=5.3$ | ex b $12 \frac{4}{100}=12.04$ | ex c $3 \frac{17}{100}=3.17$ |
| :--- | :--- | :--- |
| a $\frac{7}{10}=$ | b $3 \frac{5}{100}=$ | c $\frac{4}{100}=$ |
| d $4 \frac{38}{100}=$ | e $1 \frac{9}{100}=$ | f $1 \frac{9}{10}=$ |

4 Use a greater than (>), less than (<), or equal sign to show the relationship between the decimal numbers below.

| ex 1.09 | $<1.9$ | a 1.12 | 1.2 | b 3.5 | 3.48 |
| :--- | :--- | :--- | :--- | :--- | :--- |
| C 23.81 | 23.85 | d 4.50 | 4.5 | e 3.06 | 3.65 |

$\qquad$

## Running Problems

1a Steven is a runner training for the Olympics. Yesterday he ran 100 meters in 9.86 seconds. He ran 200 meters in 19.42 seconds. How much longer (in seconds) did it take him to run 200 meters? Show all your work.
b Did it take him more than twice as long or less than twice as long to run 200 meters than 100 meters? Use numbers and words to explain your answer.

2 Jamaican runner Asafa Powell set the men's world record for running 100 meters in 2007. He ran 100 meters in 9.74 seconds. How close is Steven to tying this world record? Show all your work.

3 In 1988, Florence Griffith Joyner set the women's world record for running the 100 meters. She ran it in 10.49 seconds. How much longer did it take her to run 100 meters than it took Asafa Powell? Show all your work.

$\qquad$

## Using Pictures to Compare Decimals \& Fractions

Each grid below is divided into 100 equal squares. Fill in squares to show a picture of each decimal number. Then compare the decimal number to certain fractions using $<,>$ or $=$.

$\qquad$

## From Home to School \& Back

1a Last Friday, Ray went home with his cousin Jewel after school. They took the city bus to Jewel's house. It costs $\$ 1.65$ to ride the bus. Ray had 5 quarters, a dime, and 3 nickels. How much more money did he need to ride the bus? Show all your work.
b How much did it cost Ray and Jewel to ride the bus altogether? Show all your work.


2a Ray's school is 1.7 miles from his house. He walks to and from school every day. How many miles does he walk each day? Show all your work.

## CHALLENGE

b How many miles does he walk in a 5-day school week? Show all your work.

3 The bus ride to Jewel's house is 4.65 miles long. How much farther is the bus ride to Jewel's house than the walk to Ray's house? Show all your work.

$\qquad$
$\qquad$

## Ordering Decimals \& Fractions

1 Write the decimal number that is equal to each fraction below.

| ex $\frac{25}{100}=0.25$ | $\mathbf{a} \frac{5}{10}=$ | $\mathbf{b} \frac{50}{100}=$ | c $\frac{75}{100}=$ |
| :--- | :--- | :--- | :--- |
| d $\frac{1}{4}=$ | e $\frac{1}{2}=$ | f $\frac{3}{4}=$ | $\mathbf{S} \frac{10}{10}=$ |

2a Write each decimal number in the box where it belongs.
0.28
0.06
0.92
0.3
0.8
0.6
0.15
0.71

| less than $\frac{1}{4}$ | between $\frac{1}{4}$ and $\frac{1}{2}$ | between $\frac{1}{2}$ and $\frac{3}{4}$ | greater than $\frac{3}{4}$ |
| :--- | :--- | :--- | :--- |
|  |  |  |  |

b Write the decimal numbers above in order from least to greatest.
$\qquad$
$\qquad$
$\qquad$ greatest

3 Write the following fractions and decimals in order from least to greatest.
0.3
$\frac{9}{10}$
0.78
0.08
0.23
$\frac{3}{4}$
$\overline{\text { least }}-\quad-\quad \overline{\text { greatest }}$

4 Write the following fractions and decimals in order from least to greatest.
3.6
$\frac{5}{4}$
$\frac{1}{3}$
0.02
$1 \frac{1}{2}$
2.25
$\frac{10}{4}$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$

## Pencils \& Paint

1 Keiko wants to buy mechanical pencils for all 25 of her classmates. Mechanical pencils come in packages of 6 that each cost $\$ 2.99$. If Keiko has $\$ 12$ in her pocket, can she buy enough mechanical pencils right now? Show all your work.


CHALLENGE
2 On Spring Cleanup Day, the fourth graders are going to paint the hallways in the school. They measured the walls and figured out that they have 4,800 sq. feet to paint. They want to paint half of the walls green and half yellow. Each gallon of green paint covers 250 sq. feet and costs $\$ 30$. Each gallon of yellow paint covers 250 sq. feet and costs $\$ 32$. How much will it cost them to buy enough paint to paint the hallways? Show all your work.
$\qquad$
$\qquad$

## Rounding Decimals \& Fractions to the Nearest Whole Number

1 Write the decimal and fraction numbers where they belong on the number line below.


2 Write the decimal and fraction numbers where they belong on the number line below.

| 0.75 | $\frac{7}{5}$ | 7.05 | $5 \frac{7}{10}$ |
| :--- | :--- | :--- | :--- |



3 When you round a fraction or decimal number to the nearest whole number, you look to see whether it is closer to the whole number above it or below it. If the fraction or decimal part of the number is equal to or greater than one-half, round up. If it is less than one-half, round down. Round these numbers to the nearest whole number. You do not have to write an explanation.

| ex a 0.75 $\qquad$ <br> 0.75 rounds up to 1 because the decimal part of the number ( 0.75 ) is greater than one-half. |  |  | $\text { ex b } 1.05 \quad 1$ <br> 1.05 rounds down to 1 because the decimal part of the number ( 0.05 ) is less than one-half. |  |
| :---: | :---: | :---: | :---: | :---: |
|  | 0.25 | b $\frac{3}{4}$ | C $\frac{9}{5}$ | d $\frac{7}{5}$ |
|  | 7.05 | f $5 \frac{7}{10}$ | S $6 \frac{3}{4}$ | h 7.8 |

## CHALLENGE

4 Round these fraction and decimal numbers to the nearest whole number.

| a 38.43 | b 74.09 | C $26 \frac{8}{15}$ | d $401 \frac{2}{19}$ |
| :--- | :--- | :--- | :--- |

## Decimal \& Fraction Story Problems

1 Breanna is having a barbecue with her family. They need to get $2 \frac{1}{4}$ pounds of ground beef for everyone to have a hamburger. Breanna found a package of ground beef at the store that was 2.4 pounds. Would that be enough ground beef for their family? Explain your answer.


2 Bob is making jam. He needs $3 \frac{3}{4}$ pounds of strawberries. He put a box of berries on the scale at the farm stand. The scale said "3.6 pounds." Is that enough strawberries? Explain your answer.

3 Leilani's mom said that they could stop for a snack sometime after they had driven $13 \frac{1}{2}$ miles. The trip meter on their car shows 13.8 miles. Can they stop for a snack now?
$\qquad$
$\qquad$

## Comparing Decimals \& Fractions

1 Write each pair of numbers as a pair of fractions and as a pair of decimals. Then use < or > to complete the number sentence comparing the two numbers.

|  | Pair of Fractions (with the same denominator) | Pair of Decimals (to the same place value) | Number Sentence |
| :---: | :---: | :---: | :---: |
| example $0.36 \quad \frac{4}{10}$ | $\frac{36}{100}$ and $\frac{40}{100}$ | 0.36 and 0.40 | $0.36<\frac{4}{10}$ |
| a $0.12 \quad \frac{2}{10}$ | and | and | $0.12 \quad \frac{2}{10}$ |
| b $\begin{array}{ll} \frac{56}{100} & 0.5 \end{array}$ | and | and | $\frac{56}{100} 0.5$ |
| C $0.04 \frac{9}{100}$ | and | and | $0.04 \quad \frac{9}{100}$ |
| d $\frac{8}{100} \quad 0.3$ | and | and | $\frac{8}{100} \bigcirc 0.3$ |

2 Compare each pair of numbers using $<$, $>$, or $=$.

| a $\frac{2}{3}$ | 0.75 | b 0.5 | $\frac{50}{100}$ | C 0.7 | $\frac{1}{2}$ |
| :--- | :---: | :--- | :---: | :--- | :---: | :---: |
| d $\frac{8}{10}$ | 0.08 | e $\frac{9}{100}$ | 0.6 | f 0.5 | $\frac{3}{16}$ |
| $\mathbf{S} 4.3$ | $\frac{9}{2}$ | h 3.05 | $\frac{6}{2}$ | i $\frac{5}{4}$ | 1.25 |
| j 2.50 | $2 \frac{1}{2}$ | k $\frac{10}{5}$ | $2 \frac{1}{4}$ | I $\frac{12}{4}$ | 2.75 |

## CHALLENGE

3 Compare each pair of numbers using $<$, $>$, or $=$.

| a 3.5 | $\frac{305}{100}$ | b $\frac{46}{100}$ | 0.3 | C 0.29 | $\frac{29}{10}$ | d $\frac{150}{200}$ | 0.3 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |

$\qquad$

## More Decimal \& Fraction Story Problems

1 Elisa needs a total of $5 \frac{1}{2}$ pounds of berries for some pies she is making. She already has 3 pounds of berries at home. At the market, she found a package of raspberries that weighs 1.15 lbs . and a package of marrionberries that weighs 1.56 lbs. If she buys these two packages of berries, will she have enough berries altogether? Explain your answer.


2 Ming and Enrico are trying to see who can run the most in a week. Ming ran 2.7 miles on Monday, 2.5 miles on Wednesday, and 3.4 miles on Friday. The perimeter of the playground is half a mile. Enrico ran around the playground 17 times on Friday. Who ran farther, Ming or Enrico? Explain your answer.

$\qquad$

## Area Problems

Determine the area of each figure below. Some figures are divided into rectangles for you with dotted lines. Show all your work.


## Thinking about Area

1 Determine the area of each rectangle below. Write the area inside the rectangle.
a

b
$3 \lcm{\square}$
C

d
24
3

$\boldsymbol{e}$ Look at the rectangles above. What happens to the area of the rectangle when one of the dimensions is doubled?

2 Determine the area of each rectangle below. Write the area inside the rectangle.
a
32
4 $\square$
b

C
8
4

d
4

e Look at the rectangles above. What happens to the area of the rectangle when one of the dimensions is halved?

## CHALLENGE

3 What happens to the area of a rectangle when both dimensions are doubled? Start with this rectangle and then draw and label two more rectangles to show what happens.

$\qquad$

## Solving Equations

1 Fill in the missing number in each equation. You do not need to explain your answers.

| example $30+\underline{4}=34$ The missing number must be 4, because $30+4=34$. |  |  |
| :---: | :---: | :---: |
| a $40+\ldots=52$ | b $\quad \times 10=110$ | C $32=\ldots 4$ |
| d | e $40=\ldots-8$ | f $4+\ldots=90$ |

2 Sometimes a letter is used instead of a blank to show a missing number in an equation. Figure out what number the letter in each equation represents. You do not need to explain your answers.

| example $3 \times a=6 \quad$ The letter a represents 2 , because $3 \times 2=6$. $a=2$ |  |  |  |
| :---: | :---: | :---: | :---: |
| $\begin{gathered} \mathbf{a} 72=a \times 9 \\ a= \end{gathered}$ | $\begin{aligned} & \mathbf{b} a+90=110 \\ & \quad a= \end{aligned}$ | $\begin{array}{r} \text { C } 49=a \times 7 \\ =a \end{array}$ | $\begin{aligned} & \text { d } a-20=80 \\ & a= \end{aligned}$ |
| $\begin{aligned} & 45 \div a=9 \\ & a= \end{aligned}$ | $\begin{gathered} f a+32=46 \\ a= \end{gathered}$ | $\begin{gathered} \mathbf{S} 56=a \times 8 \\ a= \end{gathered}$ | $\begin{gathered} \mathbf{h} 78=85-a \\ a= \end{gathered}$ |

## CHALLENGE

3 Write four different equations in which $a$ would have to be equal to 5 .

| $\mathbf{a} a+\ldots=\ldots$ | $\mathbf{b} \ldots$ |
| :--- | :--- | :--- |
| $\mathbf{C} \div a=\ldots$ | $\mathbf{d} \ldots$ |

## Writing \& Solving Equations

You can use numbers, symbols, and letters to represent a situation with an equation. Write two equations to represent each situation below. Use a box to represent the unknown amount first. Then use a letter to represent the unknown amount. Then figure out what the unknown amount is.

| Situation | Equation <br> with Box | Equation <br> with Letter | Solve It |
| :--- | :---: | :---: | :---: |
| example Luis had 3 fish. He <br> got some more at the pet store. <br> Now he has 12 fish. How many <br> fish did he buy? | $3+\square=12$ | $3+f=12$ | He got 9 fish. <br> $f=9$ |
| $\mathbf{1}$ Alana had 25 seashells. She <br> gave some to her sister. Now she <br> has 12 seashells. How many <br> seashells did she give her sister? |  |  |  |
| $\mathbf{2}$ George put apples into bags <br> to sell at the farmers market. <br> He put 5 apples into each bag. <br> He had 45 apples altogether. <br> How many bags did he fill? |  |  |  |
| $\mathbf{3}$ Mr. James had 16 book- <br> marks to give to the 4 students <br> in his reading group. How <br> many bookmarks did each <br> student get if they all got the <br> same number of bookmarks? |  |  |  |
| Z 4 Serafina had 30 stickers. |  |  |  |
| She gave the same num- |  |  |  |
| ber of stickers to each of her 3 <br> friends. Now she has 18 stickers <br> left. How many stickers did she <br> give to each friend? |  |  |  |

$\qquad$

## What's the Rule?

For each pattern, fill in what comes next. Then use words to describe the rule that makes each pattern.


## Number Patterns \& Divisibility

1 Fill in the missing numbers in each count-by sequence.

| a 2 | $2,4,6,8,10,12$, |
| :---: | :---: |
| b 5 | 5, 10, 15, 20, 25, |
| C 10 | 10, 20, 30, 40, |

2 Write a sentence to explain what the numbers in each sequence above have in common. Hint: Look at the numbers in the ones place.
a All the count-by-2 numbers
b All the count-by-5 numbers

C All the count-by-10 numbers

3 All the numbers in a count-by sequence are divisible by the same number. For example, all the numbers in the count-by-2 sequence are divisible by 2 . Think about whether each number below is divisible by 2,5 , and 10 .

| Number | Divisible <br> by 2? | Divisible <br> by 5? | Divisible <br> by 10? |
| :--- | :---: | :---: | :---: |
| ex 96 | yes | no | no |
| a 40 |  |  |  |
| b 75 |  |  |  |
| C 37 |  |  |  |
| d 110 |  |  |  |


| Number | Divisible <br> by 2? | Divisible <br> by 5? | Divisible <br> by 10? |
| :--- | :--- | :--- | :--- |
| $\boldsymbol{e} 364$ |  |  |  |
| $\mathbf{f} 930$ |  |  |  |
| $\mathbf{S} 361$ |  |  |  |
| $\mathbf{h} 576$ |  |  |  |
| $\mathbf{i} 785$ |  |  |  |

## Ounces, Cups, Pints, Quarts \& Gallons

1 Fill in the following equivalencies for measurements of capacity.
a There are $\qquad$ fluid ounces in 1 cup. $\mathbf{b}$ There are $\qquad$ cups in 1 pint.

C There are $\qquad$ pints in 1 quart.
d There are $\qquad$ cups in 1 quart.
e There are $\qquad$ quarts in 1 gallon. $f$ There are $\qquad$ pints in 1 gallon.

2 Ben filled his lawn mower's gas tank. It holds 5 gallons of gas. How many fluid ounces is that? Show all your work.


## CHALLENGE

3 Jenny has a big watering can that holds 2 gallons of water. She filled it up and then used $\frac{3}{4}$ of the water to water the plants on her front porch. Then she went to the back porch. On the way, she poured 2 more quarts of water into the watering can. She used 1 pint of the water to water the plants on her back porch. How much water was left in her watering can? Show all your work.


## Find or Write the Matching Equation

1 Draw a line from each problem situation to the equation that best matches it.
a Nina had 2 cats. One of the cats had kittens and now Nina has 8 cats. How many kittens did they have?

$$
8 \div k=2
$$

$$
8-k=2
$$

$2 \times k=8$ she get rid of?
d Takumi was tying knots. He tied the same number of knots on 2 different pieces of string. When he was done, he had tied 8 knots. How many knots did he tie on each piece of string?

2 Write an equation, inequality, or expression to show each situation.

| example Joe and Keira were putting their money <br> together to buy a present for their mom. Joe had $\$ 15$ and <br> together they had more than $\$ 30$. | $\$ 15+k>\$ 30$ |
| :--- | :--- |
| a Esteban was organizing his rock collection. He put the <br> same number of rocks into each box. He had 30 rocks and <br> 5 boxes. How many rocks did he put into each box? |  |
| $\mathbf{b}$ Ebony made 9 bracelets. She gave each of her 3 friends <br> the same number of bracelets. How many bracelets did <br> each friend get? |  |
| C Gregory had $\$ 45$. His sister asked to borrow some <br> money. Gregory gave her some money, but he still had <br> more than $\$ 30$ left. |  |

## Thinking about Number Patterns

1 Fill in the missing numbers in each count-by sequence below.
a $32,34,36,38,40$, $\qquad$ , $\qquad$
$\qquad$
$\qquad$
$\qquad$ ,
b $35,40,45,50,55$, $\qquad$ , $\qquad$ , $\qquad$
$\qquad$

C $40,50,60,70,80$, $\qquad$ , $\qquad$ , $\qquad$ , , $\qquad$

2 List three things that you know must be true of any whole number that ends in 0 .

3 Nia says that any multiple of 6 must also be a multiple of 2 and 3. Explain why you agree or disagree with her. Hint: Remember that you can use count-by patterns to think about multiples.

## The Paper Problem

1 Shanice and Micah are using yellow craft paper to cover a bulletin board. The board is 11 feet wide and 7 feet tall. The craft paper comes in a roll that is 1 yard wide. They can roll it out and cut it to any length, but the paper will always be 1 yard wide. Draw and label on the bulletin board pictures below to show 2 different ways Shanice and Micah can cover the bulletin board.

a First way.
11 ft .

7 ft .

b Second way.
11 ft .

7 ft . $\square$

2 Which of the two ways above wastes less paper? Use pictures, numbers, and words to explain your answer.
$\qquad$

## The Vegetable Eating Contest

The students in rooms 106 and 108 decided to have a contest to see which classroom ate the most vegetables. Each day for a week they kept track of the number of students from each room who ate vegetables. This double bar graph shows their results. There are 24 students in each class.


1 How many students does each box on the graph represent?

2 How many students from room 108 ate vegetables on Thursday?

3 On which day or days did the same number of students from each room eat vegetables?

4 On which day or days did more students from room 108 eat vegetables?

5 Which class did a better job of eating vegetables? Use evidence from the graph to explain your answer.

## Room 108's Fruit Graph

1 The students in room 108 wanted to see how many of them ate fruit each day at lunchtime. They kept track of how many students in their class ate fruit each day for two weeks. (They did not have school on Monday of the second week.) Their results are shown in the table below. Use the data in the table to complete the bar graph. You will need to:
a title the graph
b label the vertical axis
C fill in the data

| Day | Number of Students <br> Eating Fruit |
| :---: | :---: |
| Mon | 12 |
| Tues | 15 |
| Wed | 11 |
| Thurs | 16 |
| Fri | 15 |
| Tues | 16 |
| Wed | 17 |
| Thurs | 13 |
| Fri | 14 |

2a Write the 9 pieces of data from lowest to highest.
$\overline{\text { lowest }}-\quad-\quad-\quad-\quad \overline{\text { highest }}$
b What is the range in the data (the difference between the lowest and highest numbers)?

C What is the mode of the data (the number(s) that appears most frequently)?
d What is the median number (the numbers in the middle when the data is listed from lowest to highest)?
$\qquad$
$\qquad$

## Two Different Kinds of Data

Categorical data breaks a population (of a class or a school, for example) into categories or groups. People often use surveys to collect categorical data. Numerical data is based on taking measurements. You can find the range and median of numerical data, but you can't for categorical data.

For each set of data described below, decide whether it is categorical or numerical. Then choose the unlabeled graph that best represents it.

| Description of Data | Categorical or Numerical | Graph |
| :---: | :---: | :---: |
| 1 The scientists at the weather center kept track of the average temperature for each month this year, starting in January. |  |  |
| 2 The cafeteria manager surveyed students to find out how many prefered burritos, hamburgers, or pizza. |  |  |
| 3 The teacher counted how many students walked, rode the school bus, drove in a car, or rode the city bus to school. |  |  |
| 4 The students in room 206 had a jumping contest to see who could jump the farthest. They showed all of the jump distances on a graph. |  |  |

A

B

C

D

$\qquad$
$\qquad$

## How Tall Are We?

Eleven friends measured their heights at the beginning of the school year and at the end of the school year to see how they grew. The table below shows their heights at the end of the school year.

| Friend's Initials | AF | BB | CJ | DS | EA | FN | GG | HC | IJ | JJ | KD |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Height in Inches | 52 | 50 | 52 | 53 | 51 | 54 | 57 | 52 | 54 | 53 | 60 |

1 List the friends' heights in order from shortest to tallest.

$\mathbf{2 a}$ What is the range in the friends' heights? (Range is the difference between the highest and lowest values.)
b Write a sentence explaining what the range tells you about the friends' heights.

3a What is the mode of the friends' heights? (Mode is the value that appears most frequently in the set of data.)
b Write a sentence explaining what the mode tells you about the friends' heights.

4a What is the median in the friends' heights? (If you have an odd number of numbers, the Median is the middle number when the numbers are listed from lowest to highest.)
$\mathbf{b}$ Write a sentence explaining what the median tells you about the friends' heights.

## Estimate or Exact Measurement?

1 Read the situations below carefully. Write $E$ if an estimate is good enough. Write $M$ if an exact measurement is necessary.
a $\qquad$ Isaac is buying some items at the store. He has $\$ 20$ in his pocket. Does he need to know exactly how much the items cost altogether, or can he estimate to see if he has enough money?
b $\qquad$ Tiffany is making a frame for her favorite picture. Does she need to measure the picture exactly to know how big her frame should be, or can she estimate?

C $\qquad$ Martin has some chores he needs to do on Saturday. His friend wants to know if he can come over to play at 4:30. Does Martin need to know exactly how long he will spend on each chore, or can he estimate to see if he will be done in time to play with his friend?
d $\qquad$ Jin is baking cookies. Can he estimate the amount of flour he puts in the recipe, or does he need to measure it out exactly?
$\qquad$ Mrs. Suarez is making some curtains for her living room. Can she estimate how big her windows are, or should she measure them to figure out exactly how wide and tall they are before she starts cutting her fabric?

2 Describe a time you needed to take an exact measurement. What were you doing? What tool did you use to measure? What unit of measurement did you use?

3 Describe a time you made an estimate. How did you make your estimate? For example, did you use rounding and friendly numbers? Did you think about what you already knew?
$\qquad$

## Multiplication Review

1 Complete the multiplication tables below.


2 Fill in the missing numbers.


3 Complete each divison fact.
$45 \div 5=$ $\qquad$

$$
18 \div 6=
$$

$\qquad$ $28 \div 4=$ $\qquad$ $36 \div 6=$ $\qquad$

4 Use the standard algorithm to multiply each pair of numbers.

| 47 | 286 | 109 | 758 |
| ---: | ---: | ---: | ---: |
| $\times 6$ |  |  |  |
| $\times \quad 7$ | $\times 13$ | $\times 54$ |  |

## Decimal \& Fraction Riddles

1 Write the decimal number that is equal to each fraction below.

| ex a $\frac{1}{2}=\ldots \mathbf{0 . 5}$ | ex b $1 \frac{1}{2}=\ldots \mathbf{1 . 5}$ | ex C $\frac{6}{10}=\ldots \mathbf{0 . 6}$ | ex d $\frac{79}{100}=\mathbf{0 . 7 9}$ |
| :--- | :--- | :--- | :--- |
| $\mathbf{a} \frac{1}{4}=\ldots$ | $\mathbf{b} \frac{3}{4}=\ldots$ | $\mathbf{d} \frac{2}{100}=\ldots$ |  |
| e $\frac{30}{100}=\ldots$ | f $\frac{53}{100}=\ldots$ | h $3 \frac{1}{4}=\ldots$ |  |

2 Use $>,<$, or = to compare each pair of numbers.

| a $\frac{3}{2}$ | 1.5 | b 0.6 | $\frac{9}{100}$ | C $\frac{36}{100}$ | 0.25 | d 0.75 | $\frac{9}{12}$ |
| :--- | :--- | :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| e $83 \frac{1}{2}$ | 83.48 | f $\frac{125}{100}$ | 1.07 | $\mathbf{S} \frac{82}{100}$ | 0.9 | h $74 \frac{3}{4}$ | 74.8 |

3 Shade in and label each grid to show a decimal number that fits the description. There is more than one right answer for each one.

$\qquad$

## Jeff's Wallpaper Problem

1 Jeff is going to hang wallpaper on the big wall in his living room. The wall is 16 feet tall and 23 feet wide. There is a window in the middle of the wall that is 5 feet tall and 8 feet wide. How many square feet of wall does Jeff have to cover with wallpaper? Hint: Draw a picture. Show all of your work.

2 The wallpaper Jeff wants to use comes in rolls that are 1 yard wide and 10 yards long. How many square feet of wallpaper are in each roll? Show all of your work.

3 What happens to the area of a rectangle if you double one side while cutting the other side in half? Start with the rectangle below. Draw and label two more rectangles to show what happens.

8

2 $\square$
$\qquad$
$\qquad$

## Multiplication, Area \& Perimeter Review

1 Complete each multiplication puzzle. Fill in the products of rows and diagonals.


2 Find the area and perimeter of each figure below.


## CHALLENGE

3 On a separate piece of paper, draw and label a rectangle with an area of 32 square units and a perimeter of 36 units. Use numbers and/or words to show that you are correct. Attach the piece of paper to this page.
$\qquad$

## Tiling the Kitchen Floor

1 Jean and Mike are covering their kitchen floor with big tiles. The floor is 21 feet long and 17 feet wide. The tiles they are using are each 1 foot wide and 3 feet long. Each tile weighs 5 pounds. The tiles come in packages of 10 that each cost $\$ 120$. How much will it cost them to cover their floor with these tiles?
a Restate the question in your own words
b Underline the information in the problem you do need to solve the problem.
C Cross out the information in the problem you don't need to solve the problem.
d Solve the problem. Show all of your work.

2 Explain how you know your answer makes sense.

