Introduction

For Parents and Teachers

Mathematics 5 combines proven teaching methods with colorful pictures and illustrations to teach students basic math facts and concepts. Its use of practical applications helps students relate to math in the real world. Its incremental approach and spiral review (teaching concepts in small increments and continuous review) makes *Mathematics 5* an effective math course. The consistent, systematic review helps students retain what they have learned. The goal is mastery, not just exposure.

How to Use Mathematics 5

Each **unit** follows a theme, introduced by a story and photographs relating to the theme. Many word problems and nuggets of information follow this theme.

The **header** in each lesson tells what unit and lesson is taught that day. It also tells which speed or mastery drill to administer.

The **colored teaching box** beginning each lesson teaches the new concept, followed by exercises to reinforce the concept. This concept is reviewed again just before *Sharpening Your Skills*.

We Remember follows the teaching lesson and its reviews. It also reviews concepts taught in earlier lessons. Students should be able to work through these exercises independently. A small reference number after each exercise indicates the page number where the concept was taught.

Sharpening Your Skills drills students in basic computation (using any of the four math operations), mental math, and fact focus. *Fact Focus* drills basic math facts and measurement equivalents.

Lessons 5, 10, and **16** of each unit are quiz or test lessons. Most material has been reviewed five times before it is quizzed or tested. Quiz and test lessons include optional enrichment activities. They are neither reviewed nor tested. They are optional and just for fun.

The **Glossary**, **Reference Charts**, and **Index** are reference materials to help students work independently.

Mathematics 5 will equip students with tools that will enable them to apply principles to math in everyday life. It enables students to see the beauty in numbers and to learn to appreciate math. We believe that mathematics should help students achieve the ultimate goal—loving, serving, and bringing glory to God.

Course Materials

- **Mathematics 5 Textbook**
- **Student Packet**
  - Worksheets
  - Tests
  - Quizzes
  - Speed/Mastery Drills
- **Teacher's Guide**
  - Resource CD
- **Full Solution Answer Key**

Unit 3

Lesson 1 ..... **90**
Solving Division Word Problems

Lesson 2 ..... **93**
Simplifying Mixed Numbers With Improper Fractions

Lesson 3 ..... **96**
Decimals and Fractions; Finding Averages

Lesson 4 ..... **99**
Rounding Decimals to Whole Numbers; Multiplying Decimals

Lesson 5 ..... **102**
Quiz 1

Lesson 6 ..... **103**
Formula for Finding the Area of a Rectangle

Lesson 7 ..... **106**
Using Digit Sums to Check Addition; Understanding Angles

Lesson 8 ..... **109**
Subtracting Fractions From Whole Numbers

Lesson 9 ..... **112**
Finding the Least Common Multiple; Measuring to the Fourth-Inch

Lesson 10 ..... **115**
Quiz 2

Lesson 11 ..... **116**
Dividing by Multiples of 10

Lesson 12 ..... **119**
Combining Like Integers

Lesson 13 ..... **122**
Formula for Finding the Area of a Square

Lesson 14 ..... **125**
Borrowing to Subtract Mixed Numbers With Like Denominators

Lesson 15 ..... **128**
Choosing Sensible Measurement Units: Weight

Lesson 16 ..... **131**
Unit 3 Test

Unit 7

Lesson 1 ..... **266**
Multiplying Whole Numbers, Mixed Numbers, and Fractions

Lesson 2 ..... **269**
Changing Ratios to Simplest Form

Lesson 3 ..... **272**
Formula for Finding the Area of a Triangle

Lesson 4 ..... **275**
Finding a Fraction of a Number Mentally

Lesson 5 ..... **278**
Quiz 1

Lesson 6 ..... **279**
Understanding Percents

Lesson 7 ..... **282**
Understanding Prime and Composite Numbers

Lesson 8 ..... **285**
Changing Fractions to Decimals and Percents

Lesson 9 ..... **288**
Using Cross Multiplication to Solve Proportions

Lesson 10 ..... **291**
Quiz 2

Lesson 11 ..... **292**
Solving Word Problems With Remainders

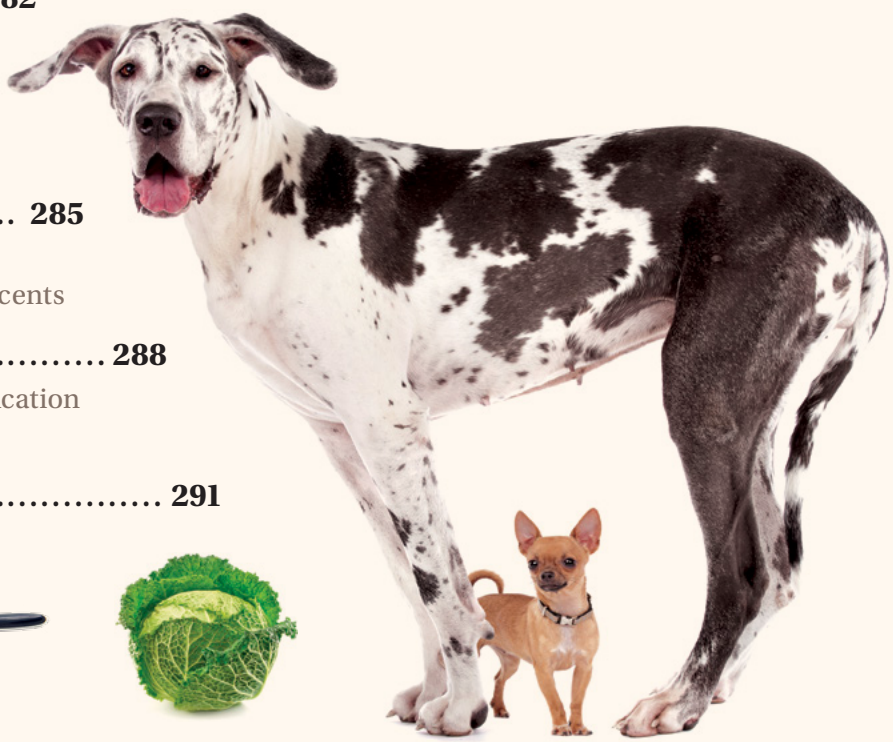
Lesson 12 ..... **295**
Introducing Reciprocals

Lesson 13 ..... **298**
Learning Metric Prefixes

Lesson 14 ..... **301**
Dividing Fractions

Lesson 15 ..... **304**
Abbreviating Metric Measurements

Lesson 16 ..... **307**
Unit 7 Test



Unit 10

Lesson 1 ..... **398**
Comparing Prices in Word Problems

Lesson 2 ..... **401**
Classifying Triangles by Sides

Lesson 3 ..... **404**
Estimating Length

Lesson 4 ..... **407**
Comparing Fractions Using Decimal Equivalents

Lesson 5 ..... **410**
Quiz 1

Lesson 6 ..... **411**
Intersection of Sets

Lesson 7 ..... **414**
The Commutative Properties of Addition and Multiplication

Lesson 8 ..... **417**
Reading Roman Numerals Through 2,999

Lesson 9 ..... **420**
Rounding Decimals to Estimate

Lesson 10 ..... **423**
Quiz 2

Lesson 11 ..... **424**
Taking Shortcuts in Multiplication

Lesson 12 ..... **427**
Introducing Biological Symmetry

Lesson 13 ..... **430**
Measuring With Precision

Lesson 14 ..... **433**
Comparing Estimated Products With Exact Products

Lesson 15 ... **436**
Recognizing Incorrect Calculator Results

Lesson 16 .... **439**
Unit 10 Test

13 Using Digit Sums to Check Division

Using Digit Sums to Check Division

Digit sums can be used to check division problems. Use circles and boxes to keep the digit sums organized while checking.

Steps to Check Division Using Digit Sums

1. Find the digit sum of the divisor, of the quotient, and of the remainder and circle them.
2. Multiply the digit sums of the divisor and the quotient and add the digit sum of the remainder. Find the digit sum of that answer and put a box around it.
3. Find the digit sum of the dividend and put a box around it.
4. Compare the digit sums in the boxes. If they are not the same, the answer is wrong.

$$\begin{array}{r} \textcircled{2} \times \textcircled{8} + \textcircled{6} = \boxed{4} \\ 647\ \text{R24} \\ 38\overline{)24{,}610}\ \boxed{4} \end{array}$$

Copy and check using digit sums. Circle any wrong answers.

1. $46\overline{)35{,}402}$ $769\ \text{R28}$

2. $35\overline{)28{,}340}$ $809\ \text{R15}$

3. $27\overline{)985}$ $36\ \text{R13}$

We Remember

Write each whole number and mixed number as an improper fraction.

4. 21 p. 251

5. 15 p. 251

6. $5\frac{1}{2}$ p. 251

7. $4\frac{4}{5}$ p. 251

Copy, solve, and check the equations.

8. $n + 7 = 17$ p. 241, 251

9. $n + 7 = 9$ p. 241, 251

10. $x - 2 = 9$ p. 241, 251

11. $x - 3 = 10$ p. 241, 251

Write ∈ or ∉ to tell whether the item is an element of the set.

Set F	kinds of transportation

18. boat
p. 360

19. airplane
p. 360

20. telephone
p. 360

Copy, solve, and check.

21. $12 = n + 5$
p. 251, 354

22. $7 = x - 20$
p. 251, 354

23. $36 = n + 12$
p. 251, 354

24. $9 = x - 10$
p. 251, 354

Convert the units of measure.

25. 55 oz = ___ lb and ___ oz
p. 367

26. 17 pt = ___ qt and ___ pt
p. 367

Write the ordered pair for each point.

27. B
p. 370

28. G
p. 370

Plot the points on the grid.

29. Z (7, 2)
p. 376

30. O (6, 3)
p. 376

Set up a proportion to find the answer.

31. 5 yd = ___ in
p. 336

32. 128 c = ___ qt
p. 336

33. 960 min = ___ hr
p. 336

Round each number to the place indicated.

34. 3.026 nearest hundredth
p. 244

35. 0.233 nearest tenth
p. 244

36. 0.1259 nearest thousandth
p. 244

Solve the word problems.

37. In the rubble of her home, Maria's mother finds 3 bowls to sell for $0.40 each. With the money, she buys 6 mangoes. How much does each mango cost?
p. 363

38. With the $2.00 she earns at the coffee plantation, Maria's mother buys 1 pineapple for $0.80 and half a dozen lemons for $0.90. How much money does Maria's mother have left?
p. 363

Write <, >, or = to show how the numbers compare.

43. 4.3 ___ 4.30 (p. 160)

44. 0.501 ___ 0.05 (p. 160)

45. 6.2 ___ 6.021 (p. 160)

46. 0.013 ___ 0.003 (p. 49)

47. 4.3 ___ 4.1 (p. 49)

48. 2.22 ___ 2.12 (p. 49)

49. -5 ___ 1 (p. 62)

50. -4 ___ 6 (p. 62)

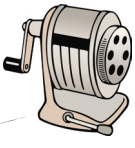
51. 1 ___ -7 (p. 62)

Solve the word problems.

52. (p. 363) One week Maria's father carves 2 dozen wooden spoons. If he sells them for 5¢ each, how much does he make that week?

53. (p. 28) The next week Maria's father carves 36 spoons. He sells all but 5 of the spoons. How many spoons does he sell that week?

54. (p. 380) Ricardo uses 2 meters of cedar wood to make large spoons and 72 centimeters to make small spoons. How much more wood does he use to make large spoons than small spoons?



Sharpening Your Skills

Computation

Copy and solve.

55. $2\frac{2}{5} \times \frac{3}{15}$

56. $2\frac{5}{8} \times 4$

57. $\frac{7}{8} \times \frac{1}{2}$

58. $\frac{5}{6} \times \frac{1}{4}$

59. $38\overline{)2{,}399}$

60. $67\overline{)6{,}234}$

61. $4\overline{)924}$

62. $7\overline{)1{,}078}$

63. 0.03 × 0.432

64. 2.2 × 0.006

65. 79 – 8.126

66. 9.1 + 6.139

Mental Math

Write the answers.

67. 59.6 ÷ 10

68. 20 ÷ 1,000

69. 13.7 × 1,000

70. 0.7 × 1,000

Tiger Cub Facts

Each picture represents a number. Use the picture math problems to figure out what number each picture represents. Write the number that goes with the picture. The answer to each picture math problem is the answer for the blank in the sentence.

1. ÷ = =

A tiger cub stays with its mother for about ___ years.

2. – = =

Normally a mother tiger will have about ___ cubs in each litter.

3. + + = =

Sometimes a litter may have ___ cubs.

4. – = =

When tiger cubs are about ___ months old, they start eating solid food.

5. – = =

When tiger cubs are about ___ months old, they start following their mother out of the den.