## Math 6, 3rd Edition—Lesson Plan Overview

### Chapter 1: Add & Subtract

<table>
<thead>
<tr>
<th>Lesson</th>
<th>Topic</th>
<th>Lesson Objectives</th>
<th>Chapter Materials</th>
</tr>
</thead>
</table>
| 1      | Whole Number Place Value | • Demonstrate an understanding of place value  
• Express numbers in standard form, word form, expanded form, and expanded form with multiplication  
• Identify the value of the digits in a number  
• Compare numbers using >, <, or =  
• Round numbers to the place of greatest value or to a given place | Teaching Visuals (Teacher’s Toolkit CD):  
• Chart 1: Roman Numerals  
Teacher Manipulatives Packet:  
• Place Value Pocket Chart Kit  
• Decimal Place Value Pocket Chart Kit  
• Place Value Kit  
• Money Kit  
• Number Line  
• Thermometer and Red Strip  
• Roman Numeral Clock  
Student Manipulatives Packet:  
• Decimal Place Value Pocket Chart Kit  
• Money Kit (optional)  
• Number Line  
Instructional Aids (Teacher’s Toolkit CD):  
• Decimal Number Lines (page IA1)  
• Part-Whole Models (page IA2)  
• Problem-Solving Plan (page IA3)  
• Positive & Negative Number Line (page IA4)  
• Roman Numerals (page IA5)  
• Roman Numerals Sequences (page IA6) for each student  
• Number Patterns (page IA7)  
• Patterns (page IA8)  
• Patterns (page IA8) for each student  
• Cumulative Review Answer Sheet (page IA9) for each student  
Christian Worldview Shaping (Teacher’s Toolkit CD):  
• Pages 1–3  
Other Teaching Aids:  
• An apple  
• A small sharp knife  
• A Bible  
• An overhead calculator  
• A calculator for each student (optional)  |
| 2      | Add Whole Numbers       | • Apply addition strategies for mental math  
• Add whole numbers  
• Estimate the sum by rounding or using front-end estimation  
• Solve addition word problems |                                                                                                           |
| 3      | Subtract Whole Numbers  | • Apply the Zero Principle of Subtraction  
• Subtract whole numbers  
• Estimate the difference by rounding or using front-end estimation  
• Solve subtraction word problems  
• Check a subtraction problem, using addition |                                                                                                           |
| 4      | Decimal Place Value     | • Demonstrate an understanding of decimal place value  
• Express decimals in standard form, word form, fraction form, expanded form, and expanded form with multiplication  
• Identify the value of the digits in a number  
• Compare and order decimals  
• Round decimals to the place of greatest value or to a given place |                                                                                                           |
| 5      | Add & Subtract Decimals | • Apply addition properties to decimals: Commutative Property, Identity Property, and Associative Property  
• Add and subtract decimals  
• Estimate sums and differences  
• Check a subtraction problem, using addition |                                                                                                           |
| 6      | Solving Problems        | • Demonstrate an understanding of the inverse relationship between addition and subtraction  
• Use a part-whole model to solve addition and subtraction word problems  
• Write an equation for a word problem  
• Solve multi-step word problems |                                                                                                           |
| 7      | Positive & Negative Numbers | • Compare and order positive and negative numbers  
• Identify the number that is 1 more or 1 less  
• Plot positive and negative numbers on a number line  
• Add positive and negative numbers using a number line |                                                                                                           |
| 8      | Roman Numerals          | • Read and write Roman numerals  
• Complete a sequence of Roman numerals |                                                                                                           |
| 9      | Patterns                | • Use logic to identify number patterns  
• Use a pattern to solve a problem |                                                                                                           |
| 10     | Chapter 1 Review        | • Review |                                                                                                           |
| 11     | Chapter 1 Test Grade 5 Review | • Add, subtract, multiply, and divide whole numbers  
• Solve equations with variables  
• Determine the perimeter and the area of polygons  
• Add decimals  
• Identify the mathematical expression for a word phrase  
• Identify the fraction represented by a picture or a number line  
• Measure to the nearest inch or half inch  
• Identify the standard form of a whole number or a decimal written in expanded form |                                                                                                           |
# Math 6, 3rd Edition—Lesson Plan Overview

## Chapter 2: Multiply by a Whole Number

<table>
<thead>
<tr>
<th>Lesson</th>
<th>Topic</th>
<th>Lesson Objectives</th>
<th>Chapter Materials</th>
</tr>
</thead>
</table>
| 12     | Multiplication | • Demonstrate an understanding of multiplication and the terms factor, product, and multiple  
• Write a mathematical equation for a word phrase  
• Solve multiplication equations with a multiplication dot, parentheses, or variables  
• Identify prime and composite numbers  
• Identify the Greatest Common Factor (GCF) and the Least Common Multiple (LCM) of a pair of numbers  
• Apply properties of multiplication to numbers and variables: Commutative Property, Associative Property, Identity Property, and Zero Property | Teacher Manipulatives Packet:  
• Place Value Kit  
• Money Kit  
Student Manipulatives Packet:  
• Place Value Kit  
• Money Kit  
Instructional Aids (Teacher's Toolkit CD):  
• Cumulative Review Answer Sheet (page IA9) for each student  
• Sieve of Eratosthenes (page IA10) for each student  
• Sieve of Eratosthenes (page IA10) for each student  
• Apply Properties (page IA11)  
• Powers of 10 (page IA12)  
• Graph Paper (page IA13)  
• Graph Paper (page IA13) for each student  
• Perfect Squares & Square Roots (page IA14)  
• Perfect Squares & Square Roots (page IA14) for each student  
• Pictures of Multiplication (page IA15)  
Christian Worldview Shaping (Teacher's Toolkit CD):  
• Pages 4–6  
Other Teaching Aids:  
• Colored pencils: red and green for each student  
• A sheet of graph paper for each student  
• A calculator for each student (optional)  
Math 6 Tests and Answer Key Optional (Teacher’s Toolkit CD):  
• Fact Review pages  
• Application pages  
• Calculator Activities |
| 13     | Multiples of 10 | • Multiply multiples of 10  
• Apply the Commutative and Associative Properties of Multiplication to multiply factors that are multiples of 10  
• Analyze patterns for using mental math to multiply factors that are multiples of 10  
• Apply the Distributive Property of Multiplication over Addition to multiply by multiples of 10  
• Identify the applied addition or multiplication property |  |
| 14     | Exponents | • Develop an understanding of exponents  
• Develop an understanding of squares  
• Write numbers in expanded form with multiplication using exponents (powers of 10) |  |
| 15     | 1- & 2-Digit Multipliers | • Multiply a whole number by a 1- or 2-digit multiplier  
• Apply the Distributive Property of Multiplication over Addition  
• Estimate the product by rounding to the place of greatest value and by using front-end estimation  
• Solve a multiplication word problem |  |
| 16     | Multiply Decimals by a Whole Number | • Multiply a decimal by a 1- or 2-digit multiplier  
• Estimate the product by rounding to the place of greatest value  
• Apply the Distributive Property of Multiplication over Addition  
• Solve decimal word problems, including money problems  
• Solve a multi-step word problem  
• Multiply a decimal by a power of 10 |  |
| 17     | 3-Digit Multipliers | • Multiply by a 3-digit multiplier  
• Estimate the product by rounding to the place of greatest value  
• Solve a money multiplication problem  
• Determine the number of partial products  
• Apply strategies to multiply mentally |  |
| 18     | Squares & Square Roots | • Develop an understanding of finding perfect squares  
• Develop an understanding of finding the square root of a perfect square  
• List the first 20 perfect squares and their square roots  
• Use the Pythagorean Theorem to find the measurement of the hypotenuse of a right triangle |  |
| 19     | Chapter 2 Review | • Review |  |
| 20     | Chapter 2 Test Cumulative Review | • Identify the addition property applied to an equation  
• Add and subtract whole numbers  
• Solve for the variable in a subtraction equation |  |
| • Identify the standard form of a whole number or a decimal written in expanded form or word form |
| • Determine the decimal represented by a point on a number line |
| • Solve for the variable in a part-whole model |
| • Read and interpret a pictograph |
# Chapter 3: Divide by a Whole Number

<table>
<thead>
<tr>
<th>Lesson</th>
<th>Topic</th>
<th>Lesson Objectives</th>
<th>Chapter Materials</th>
</tr>
</thead>
</table>
| 21     | Division | • Demonstrate an understanding of division and the terms *dividend*, *divisor*, and *quotient*  
• Demonstrate an understanding of the inverse relationship between multiplication and division  
• Divide by a 1-digit divisor to find a 2- or 3-digit quotient  
• Solve a division word problem  
• Interpret a remainder  
• Check a division problem using multiplication | Teacher Manipulatives Packet:  
• Place Value Kit  
Instructional Aids (Teacher's Toolkit CD):  
• Cumulative Review Answer Sheet (page IA9) for each student  
• Graph Paper (page IA13) for each student (optional)  
• Short Form of Division (page IA16) (optional)  
• Short Form of Division (page IA16) for each student (optional)  
• Multi-Step Problems (page IA17)  
• Multi-Step Problems (page IA17) for each student  
Christian Worldview Shaping (Teacher's Toolkit CD):  
• Pages 7–9  
Math 6 Tests and Answer Key Optional (Teacher's Toolkit CD):  
• Fact Review pages  
• Application pages  
• Calculator Activities |
| 22     | Multiples of 10 | • Recognize numbers divisible by 2, 3, 4, 5, 6, 9, or 10  
• Divide multiples of 10 using mental math  
• Divide by a 2-digit multiple of 10  
• Solve a division word problem  
• Estimate a quotient  
• Interpret a remainder  
• Check a division problem using multiplication |  
| 23     | 2-Digit Divisors | • Divide by a 2-digit divisor  
• Estimate a quotient  
• Solve a division word problem  
• Adjust the quotient in a division problem  
• Interpret a remainder  
• Check a division problem using multiplication |  
| 24     | Divide a Decimal by a Whole Number | • Divide a decimal by a 1-digit whole number  
• Annex a zero to rename a decimal  
• Check a division problem using multiplication  
• Estimate a quotient  
• Divide to find a quotient less than 1  
• Express a fraction as an equivalent decimal  
• Solve a division word problem  
• Interpret a remainder |  
| 25     | Divide a Decimal by 2-Digit Divisors | • Determine an average (mean) or a unit rate  
• Divide a decimal by a 2-digit whole number  
• Estimate a quotient  
• Divide to find a quotient less than 1  
• Annex a zero to rename a decimal  
• Solve a division word problem  
• Interpret a remainder  
• Express a fraction as an equivalent decimal |  
| 26     | Divide by a Power of 10 | • Divide by a power of 10  
• Divide a whole number by a 1-, 2-, or 3-digit divisor  
• Divide a decimal by a 1-, 2-, or 3-digit whole number  
• Estimate a quotient  
• Solve a division word problem  
• Interpret a remainder |  
| 27     | Order of Operations | • Use the Order of Operations to simplify an expression  
• Complete an expression to make an equation true |  
| 28     | Multi-Step Problems | • Solve a multi-step problem  
• Use the Order of Operations to write an equation for a multi-step problem |  
| 29     | Chapter 3 Review | • Review |  
| 30     | Chapter 3 Test Cumulative Review | • Solve multiplication and division equations  
• Determine the exponent form for a repeated multiplication equation |  

Math 6, 3rd Edition—Lesson Plan Overview

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Determine the greatest common factor of 2 numbers</td>
<td></td>
</tr>
<tr>
<td>• Determine the least common multiple of 2 numbers</td>
<td></td>
</tr>
<tr>
<td>• Identify the multiplication expression for an exponent form,</td>
<td></td>
</tr>
<tr>
<td>an array, a picture, or a part-whole model</td>
<td></td>
</tr>
<tr>
<td>• Identify the value of a digit in a number</td>
<td></td>
</tr>
<tr>
<td>• Determine the standard form of a decimal written in word form</td>
<td></td>
</tr>
<tr>
<td>• Compare and order whole numbers and decimals</td>
<td></td>
</tr>
<tr>
<td>• Identify the decimal form of a fraction</td>
<td></td>
</tr>
<tr>
<td>• Read and interpret a line graph</td>
<td></td>
</tr>
</tbody>
</table>
### Chapter 4: Fraction Theory

<table>
<thead>
<tr>
<th>Lesson</th>
<th>Topic</th>
<th>Lesson Objectives</th>
<th>Chapter Materials</th>
</tr>
</thead>
</table>
| 31     | Greatest Common Factor | • Determine the greatest common factor (GCF) of two or more numbers by listing the factors, by creating and analyzing a Venn diagram, and by constructing factor trees to find and evaluate the prime factorizations  
• Apply the GCF to problem-solving situations | Teaching Visuals (Teacher’s Toolkit CD):  
• Chart 2: Halves, Thirds, Fourths  
• Chart 3: Sixths, Eighths  
• Chart 4: Tenths  
• Chart 5: Part of a Set  
Teacher Manipulatives Packet:  
• Fraction Kit  
Student Manipulatives Packet:  
• Fraction Kit  
• Ruler: Inch Ruler (eighths) |
| 32     | Least Common Multiple | • Determine the GCF of two numbers  
• Determine the Least Common Multiple (LCM) of two or more numbers by listing the multiples, by creating and analyzing a Venn diagram, and by constructing factor trees to find and evaluate the prime factorizations  
• Write prime factorizations using exponential notation  
• Apply the LCM to problem-solving situations | Instructional Aids (Teacher’s Toolkit CD):  
• Cumulative Review Answer Sheet (page IA9) for each student  
• Numbers/Facts/Factors (page IA18)  
• Venn Diagram: Factors (page IA19)  
• Percent Circle (page IA20)  
Christian Worldview Shaping (Teacher’s Toolkit CD):  
• Pages 10–14  
Other Teaching Aids:  
• A blank sheet of paper for each student and the teacher  
• Several blank pages for display, for overlay with Percent Circle (page IA20)  
Math 6 Tests and Answer Key  
Optional (Teacher’s Toolkit CD):  
• Fact Review pages  
• Application pages  
• Calculator Activities |
| 33     | Proper Fractions | • Demonstrate an understanding of fractions  
• Write a fraction to name part of a whole, a point on a number line, and part of a set  
• Draw models of whole shapes, whole sets, and number lines to represent fractions  
• Identify fractions equivalent to 1  
• Complete a fraction model | |
| 34     | Improper Fractions & Mixed Numbers | • Rename a mixed number as an improper fraction  
• Rename an improper fraction as a whole number or a mixed number  
• Estimate the value of an improper fraction  
• Draw a model to solve a word problem | |
| 35     | Equivalent Fractions | • Apply strategies to rename fractions to higher terms  
• Apply strategies to rename fractions to lower terms and to lowest terms  
• Use cancellation to rename fractions to lowest terms | |
| 36     | Compare & Order Fractions | • Write an inequality to express unequal relationships  
• Apply fraction number sense to compare and order fractions  
• Compare and order unlike fractions by renaming to fractions with a common denominator  
• Determine equivalent fractions using the LCM  
• Compare and order mixed numbers and improper fractions | |
| 37     | More Comparing Fractions | • Write an inequality to express unequal relationships  
• Apply fraction number sense to compare and order fractions  
• Compare and order fractions by renaming unlike fractions to fractions with a common denominator, by cross-multiplying, and by renaming as decimals | |
| 38     | Fractions & Percents | • Use a fraction model to represent a percent  
• Write a percent as a fraction in lowest terms  
• Write a fraction as a percent  
• Use a circle graph to solve problems  
• Make a circle graph to communicate data | |
| 39     | Chapter 4 Review | • Review | |
| 40     | Chapter 4 Test Cumulative Review | • Determine the equation represented by a part-whole model or an array  
• Recognize the expanded form or standard form of an exponent  
• Apply multiplication properties  
• Write the expanded form of a number using exponents  
• Determine the average  
• Identify all of the factors of a number | |
<table>
<thead>
<tr>
<th>Math 6, 3rd Edition—Lesson Plan Overview</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Solve word problems</td>
</tr>
<tr>
<td>• Read and interpret a chart, a stem-and-leaf plot, and a double line graph</td>
</tr>
</tbody>
</table>
# Math 6, 3rd Edition—Lesson Plan Overview

## Chapter 5: Add & Subtract Fractions

<table>
<thead>
<tr>
<th>Lesson</th>
<th>Topic</th>
<th>Lesson Objectives</th>
<th>Chapter Materials</th>
</tr>
</thead>
</table>
| 41     | Estimate Sums & Differences | • Identify fractions equivalent to 1 and to ½  
• Write an inequality to express an unequal relationship  
• Estimate the sum or the difference of mixed numbers and fractions by rounding to the nearest whole number or the nearest ½ | Teacher Manipulatives Packet:  
• Fraction Kit  
Student Manipulatives Packet:  
• Fraction Kit  
Instructional Aids (Teacher's Toolkit CD):  
• Cumulative Review Answer Sheet (page IA9) for each student  
• Fraction Number Lines (page IA21)  
• Venn Diagram (page IA22) (optional)  
• Guess & Check (page IA23)  
Christian Worldview Shaping (Teacher's Toolkit CD):  
• Pages 15–17  
Math 6 Tests and Answer Key Optional (Teacher's Toolkit CD):  
• Fact Review pages  
• Application pages  
• Calculator Activities |
| 42     | Add & Subtract Like Fractions | • Add and subtract fractions and mixed numbers with like denominators  
• Rename an improper fraction as a mixed number  
• Simplify fractions by renaming to lowest terms  
• Solve a fraction word problem  
• Estimate the sum or the difference of mixed numbers by rounding to the nearest whole number  
• Apply addition properties to fractions: Identity Property, Commutative Property, and Associative Property | |
| 43     | Add & Subtract Related Fractions | • Add and subtract fractions and mixed numbers with unlike (related) denominators  
• Apply the Identity Property of Multiplication to rename fractions to higher terms  
• Simplify fractions by renaming to lowest terms  
• Solve a fraction word problem  
• Estimate the sum or the difference of mixed numbers and fractions | |
| 44     | Add & Subtract Unlike Fractions | • Add and subtract fractions and mixed numbers with unlike (unrelated) denominators  
• Multiply unlike denominators to find a common denominator  
• Determine the Least Common Denominator by listing multiples, by creating and analyzing a Venn diagram, and by constructing factor trees to evaluate the prime factorizations  
• Write prime factorizations using exponential notation  
• Estimate the sum or the difference of mixed numbers and fractions | |
| 45     | More Fractions & Mixed Numbers | • Compare fractions and mixed numbers  
• Round fractions to 0, ½, or 1  
• Add and subtract fractions and mixed numbers  
• Estimate the sum or the difference of mixed numbers and fractions  
• Solve problems with 3 addends  
• Solve word problems using the Least Common Denominator | |
| 46     | Guess & Check | • Use the guess-and-check strategy to solve problems | |
| 47     | Chapter 5 Review | • Review | |
| 48     | Chapter 5 Test Cumulative Review | • Read and interpret a bar graph  
• Demonstrate an understanding of part-whole models  
• Identify addition properties and multiplication properties  
• Identify the mathematical expression for a given word phrase  
• Identify multiples of a given number  
• Identify prime and composite numbers | |
# Chapter 6: Plane Figure Geometry

<table>
<thead>
<tr>
<th>Lesson</th>
<th>Topic</th>
<th>Lesson Objectives</th>
<th>Chapter Materials</th>
</tr>
</thead>
</table>
| 49     | Basic Geometric Figures | • Identify, name, and draw points, lines, and planes  
• Distinguish between collinear and noncollinear points  
• Identify the location of a point on a coordinate plane by naming the coordinates and the quadrant  
• Graph points on a coordinate plane  
• Recognize representations of points, lines, and planes in everyday life | Teacher Manipulatives Packet:  
• 2 Rays: ray A and ray BC  
Student Manipulatives Packet:  
• 2 Rays: ray A and ray BC  
Instructional Aids (Teacher’s Toolkit CD):  
• Cumulative Review Answer Sheet (page IA9) for each student  
• Coordinate Plane (page IA24)  
• Coordinate Planes (page IA25)  
• Coordinate Planes (page IA25), 4 copies for each student  
• Angles (page IA26)  
• Angles (page IA26) for each student  
• Supplementary Angles (page IA27)  
• Complementary Angles (page IA28)  
• Complementary & Supplementary Angles (page IA29)  
• Triangles (IA30 CD)  
• Triangles (IA30 CD) for each student  
• Hierarchy of Quadrilaterals (page IA31)  
• Quadrilaterals (page IA32)  
• Quadrilaterals (page IA32) for each student  
• Polygon Angle Measure (page IA33) for each student (optional)  
• Congruent & Similar Polygons (page IA34)  
• Congruent & Similar Polygons (page IA34) for each student  
• Transformations (page IA35)  
• Transformations (page IA35) for each student  
• Block Letters (page IA36), one half page for each pair of students  
• Circle (page IA37)  
• Polyhedrons (page IA38) for each student  
| 50     | Types of Lines | • Graph points on a coordinate plane to form a line, intersecting lines, perpendicular lines, and parallel lines  
• Identify lines: intersecting, perpendicular, parallel  
• Use variables to represent coordinates on a coordinate plane  
• Complete an input/output table  
• Relate lines to real-life situations |  
51     | Classifying & Measuring Angles | • Identify and name rays and angles  
• Classify angles: right, acute, obtuse, straight  
• Use a protractor to measure and draw angles  
• Relate geometry to everyday life |  
52     | Angle Relationships | • Develop an understanding of supplementary and complementary angles  
• Find the unknown measure of an angle in a pair of supplementary angles and in a pair of complementary angles  
• Recognize angles: right, acute, obtuse, straight  
• Use a protractor to measure angles |  
53     | Polygons | • Identify and name line segments  
• Demonstrate an understanding of regular and irregular polygons  
• Identify the number of sides and interior angles in a polygon  
• Graph points on a coordinate plane to form a polygon |  
54     | Triangles | • Develop the understanding that the sum of the measures of the angles in a triangle equals 180°  
• Find the unknown measure of an angle in a triangle  
• Classify triangles by their angles: right, acute, obtuse  
• Classify triangles by their sides: equilateral, isosceles, scalene  
• Measure the angles in a triangle using a protractor |  
55     | Quadrilaterals | • Distinguish between regular and irregular quadrilaterals  
• Develop an understanding of the classification of quadrilaterals  
• Develop the understanding that the sum of the angles in a quadrilateral equals 360°  
• Find the unknown measure of an angle in a quadrilateral  
• Measure the angles in a quadrilateral using a protractor |  
56     | Congruent & Similar Figures | • Identify congruent and similar polygons  
• Identify corresponding angles and line segments  
• Write a ratio for corresponding sides in a pair of polygons  
• Draw congruent and similar polygons |  
57     | Transformations & Symmetry | • Develop an understanding of transformations: translation, rotation, reflection  
• Identify a transformation  
• Draw a transformed figure  
• Identify symmetrical figures  
• Draw lines of symmetry on a figure |  
58     | Circles | • Find the length of the diameter of a circle given the radius  
• Find the length of the radius of a circle given the diameter |  

**Christian Worldview Shaping (Teacher’s Toolkit CD):**  
• Pages 18–19  

**Other Teaching Aids:**  
• A blank page for display, for overlay with Coordinate Plane (page IA24)  
• 2 lengths of string (each at least 1 yard in length)  
• 2 sheets of colored paper (2 different colors)  
• A small rectangular poster or teaching chart  
• An overhead protractor  
• Chalk or markers (3 different colors)  
• Construction paper (at least 3 different colors)  
• Tracing paper (optional)  
• An object to represent each of the
**Math 6, 3rd Edition—Lesson Plan Overview**

<table>
<thead>
<tr>
<th>Page</th>
<th>Topic</th>
<th>Details</th>
</tr>
</thead>
</table>
| 59   | 3-Dimensional Figures | • Develop an understanding of polyhedrons  
  • Identify 3-dimensional figures that are not polyhedrons  
  • Classify 3-dimensional figures: spherical, conical, cylindrical  
  • Identify the number of faces, vertices, and edges in polyhedrons  
  • Construct polyhedrons |
| 60   | Chapter 6 Review | • Review |
| 61   | Chapter 6 Test Cumulative Review | • Compare fractions  
  • Multiply and divide decimals by a multiple of 10  
  • Add and subtract fractions  
  • Identify kinds of angles and lines  
  • Find the unknown measure of an angle in a triangle  
  • Multiply by a 2-digit multiplier  
  • Identify a prime number  
  • Determine a common factor  
  • Find the missing subtrahend in a subtraction equation  
  • Add decimals and whole numbers  
  • Compare integers  
  • Use a chart to answer questions and to solve problems |

**Math 6 Tests and Answer Key**

Optional (Teacher’s Toolkit CD):  
• Fact Review pages  
• Application pages  
• Calculator Activities
## Math 6, 3rd Edition—Lesson Plan Overview

### Chapter 7: Multiply Fractions & Decimals

<table>
<thead>
<tr>
<th>Lesson</th>
<th>Topic</th>
<th>Lesson Objectives</th>
<th>Chapter Materials</th>
</tr>
</thead>
</table>
| 62     | Multiply Fractions | • Multiply a whole number and a fraction  
 • Multiply to find a fraction of a whole number  
 • Multiply to find a fraction of a fraction  
 • Rename a whole number as an improper fraction  
 • Write and solve an equation for a multiplication word problem | Teacher Manipulatives Packet:  
 • Decimal Place Value Pocket Chart (B)  
 • Fraction Kit  
 • Fraction Number Line (yellow)  
 Student Manipulatives Packet:  
 • Fraction Kit  
 • Fraction Number Line (yellow) |
| 63     | Simplify | • Multiply to find a fraction of a fraction  
 • Use cancellation when multiplying fractions  
 • Identify the reciprocal of a fraction  
 • Write and solve an equation for a word problem | Instructional Aids (Teacher’s Toolkit CD):  
 • Cumulative Review Answer Sheet (page IA9) for each student  
 • Fraction Paper Folding (page IA39) (optional)  
 • Decimal Grids (page IA40)  
 • In-Between Numbers (page IA41) |
| 64     | Multiply Mixed Numbers | • Multiply mixed numbers  
 • Rename an improper fraction as a mixed number  
 • Rename a mixed number as an improper fraction  
 • Apply the Distributive Property of Multiplication over Addition when multiplying mixed numbers  
 • Use cancellation when multiplying mixed numbers  
 • Write and solve an equation for a word problem  
 • Estimate products of mixed numbers and fractions | Christian Worldview Shaping (Teacher’s Toolkit CD):  
 • Pages 20–21  
 Other Teaching Aids:  
 • 12 counters  
 • A blank sheet of paper (unlined) for the teacher  
 • 2 blank sheets of paper (unlined) for each student  
 • Colored markers: red and blue |
| 65     | Multiply Decimals | • Multiply a decimal by a decimal  
 • Demonstrate an understanding of the relationship between decimals and fractions  
 • Estimate a decimal product by rounding to the nearest whole number or to the place of greatest value  
 • Apply the Distributive Property of Multiplication over Addition when multiplying decimals  
 • Use mental math to multiply a decimal and a power of 10 | Math 6 Tests and Answer Key  
 Optional (Teacher’s Toolkit CD):  
 • Fact Review pages  
 • Application pages  
 • Calculator Activities |
| 66     | More Multiplying Decimals | • Multiply a decimal by a decimal  
 • Demonstrate an understanding of the relationship between decimals and fractions  
 • Annex zeros in the product  
 • Multiply money by a decimal  
 • Estimate a decimal product by rounding | |
| 67     | Between Numbers | • Develop an understanding of our infinite number system  
 • Identify fractions and decimals that come between two numbers  
 • Solve a multi-step word problem | |
| 68     | Chapter 7 Review | • Review | |
| 69     | Chapter 7 Test Cumulative Review | • Find the unknown measure of an angle in a quadrilateral  
 • Identify the parts of a circle  
 • Classify triangles: equilateral, isosceles, scalene  
 • Solve money word problems  
 • Add and subtract mixed numbers  
 • Identify the value of a digit in a decimal  
 • Multiply fractions and decimals  
 • Read and interpret a double line graph | |
<table>
<thead>
<tr>
<th>Lesson</th>
<th>Topic</th>
<th>Lesson Objectives</th>
<th>Chapter Materials</th>
</tr>
</thead>
</table>
| 70     | Divide by a Fraction | • Demonstrate an understanding of dividing a whole number by a fraction and dividing a fraction by a fraction  
• Divide a mixed number by a fraction  
• Use a number line to solve a division equation with fractions  
• Draw a diagram to solve a division equation with fractions  
• Check a division problem using multiplication  
• Write and solve an equation for a word problem | Teacher Manipulatives Packet:  
• Fraction Kit  
Student Manipulatives Packet:  
• Fraction Kit  
Instructional Aids (Teacher's Toolkit CD):  
• Cumulative Review Answer Sheet (page IA9) for each student  
• Multi-Step Word Problems (page IA42)  
Christian Worldview Shaping (Teacher's Toolkit CD):  
• Page 22  
Other Teaching Aids:  
• Colored markers or chalk: 3 different colors  
Math 6 Tests and Answer Key  
Optional (Teacher's Toolkit CD):  
• Fact Review pages  
• Application pages  
• Calculator Activities |
| 71     | Divide Fractions | • Demonstrate an understanding of dividing a fraction to find a quotient with a remainder  
• Draw a diagram to solve a division equation with fractions  
• Use a number line to solve a division equation with fractions  
• Check a division problem using multiplication | |
| 72     | Multiply by the Reciprocal | • Identify the reciprocal of a fraction  
• Divide by multiplying by the reciprocal of the divisor  
• Divide a fraction by a whole number  
• Draw a diagram to solve a division word problem with fractions  
• Check a division problem using multiplication  
• Write related multiplication and division equations for a division problem with fractions | |
| 73     | Mixed Numbers & Reciprocals | • Demonstrate an understanding of dividing mixed numbers  
• Divide mixed numbers by multiplying by the reciprocal of the divisor  
• Check a division problem using multiplication  
• Draw a diagram to solve a division word problem with a mixed number  
• Use a number line to solve a division word problem with a mixed number  
• Solve fraction word problems | |
| 74     | Multi-Step Equations | • Write and solve a multi-step equation for a multi-step word problem  
• Demonstrate an understanding of the Order of Operations | |
| 75     | Properties | • Apply mathematical properties to evaluate an expression with fractions  
• Use the Order of Operations to evaluate an expression  
• Substitute a given value for a variable in an expression | |
| 76     | More Multi-Step Word Problems | • Use the Order of Operations to write and solve a multi-step equation for a multi-step word problem  
• Determine whether a multi-step problem has too much or too little information | |
| 77     | Chapter 8 Review | • Review | |
| 78     | Chapter 8 Test Cumulative Review | • Add integers  
• Complete a number sequence  
• Determine an equivalent expression  
• Evaluate an expression with more than one operation  
• Read and interpret a double line graph | |
# Chapter 9: Divide Decimals

<table>
<thead>
<tr>
<th>Lesson</th>
<th>Topic</th>
<th>Lesson Objectives</th>
<th>Chapter Materials</th>
</tr>
</thead>
</table>
| 79     | Divide Decimals      | • Divide a decimal by a 1-digit whole number  
          • Estimate the quotient of a decimal division problem  
          • Check a division problem using multiplication  
          • Annex a zero to rename a decimal  
          • Divide a decimal by a power of 10 using mental math | Teacher Manipulatives Packet:  
          • Place Value Kit  
          • Number Line  

Instructional Aids (Teacher’s Toolkit CD):  
          • Cumulative Review Answer Sheet (page IA9) for each student  
          • Input/Output Tables (page IA43)  
          • Dividing Decimals (page IA44) for each student  

Christian Worldview Shaping (Teacher’s Toolkit CD):  
          • Pages 23–24  

Other Teaching Aids:  
          • A calculator for each student  

Math 6 Tests and Answer Key  
          Optional (Teacher’s Toolkit CD):  
          • Fact Review pages  
          • Application pages  
          • Calculator Activities |
| 80     | Estimate             | • Divide a decimal by a 1- or a 2-digit whole number  
          • Estimate the quotient of a decimal division problem  
          • Divide a whole number by a whole number to find a decimal fraction in the quotient  
          • Check a division problem using multiplication  
          • Solve a decimal word problem |  
| 81     | Repeating Decimals   | • Divide a decimal by a 1- or a 2-digit whole number  
          • Estimate the quotient of a decimal division problem  
          • Develop an understanding of terminating decimals and repeating decimals  
          • Recognize a repeating decimal in the quotient  
          • Divide a whole number by a whole number to find a decimal fraction in the quotient  
          • Write an equation for a word problem  
          • Solve money word problems |  
| 82     | Fractions as Decimals| • Rename a fraction as a decimal by renaming the denominator as a power of 10  
          • Rename a fraction as a decimal using division  
          • Identify a quotient as a repeating decimal or a nonrepeating, non-terminating decimal  
          • Compare a decimal and a fraction |  
| 83     | Divide by a Decimal  | • Divide a whole number by a decimal  
          • Write an equation for a word problem |  
| 84     | More Dividing Decimals| • Divide a whole number by a decimal  
          • Divide a decimal by a decimal  
          • Solve money word problems  
          • Complete an input/output table |  
| 85     | Real Numbers         | • Develop an understanding of real numbers  
          • Apply addition and multiplication properties to real numbers |  
| 86     | Chapter 9 Review     | • Review |  
| 87     | Chapter 9 Test       | • Solve word problems  
          • Read a Venn diagram  
          • Demonstrate an understanding of the parts of a circle  
          • Find the perimeter of a square  
          • Determine whether two polygons are congruent or similar  
          • Find the unknown measure of an angle in a triangle  
          • Identify a triangle according to its angles  
          • Read and interpret a line graph  

Cumulative Review  
          • Solve word problems  
          • Read a Venn diagram  
          • Demonstrate an understanding of the parts of a circle  
          • Find the perimeter of a square  
          • Determine whether two polygons are congruent or similar  
          • Find the unknown measure of an angle in a triangle  
          • Identify a triangle according to its angles  
          • Read and interpret a line graph  

Cumulative Review  
          • Solve word problems  
          • Read a Venn diagram  
          • Demonstrate an understanding of the parts of a circle  
          • Find the perimeter of a square  
          • Determine whether two polygons are congruent or similar  
          • Find the unknown measure of an angle in a triangle  
          • Identify a triangle according to its angles  
          • Read and interpret a line graph  

Cumulative Review  
          • Solve word problems  
          • Read a Venn diagram  
          • Demonstrate an understanding of the parts of a circle  
          • Find the perimeter of a square  
          • Determine whether two polygons are congruent or similar  
          • Find the unknown measure of an angle in a triangle  
          • Identify a triangle according to its angles  
          • Read and interpret a line graph  

Cumulative Review  
          • Solve word problems  
          • Read a Venn diagram  
          • Demonstrate an understanding of the parts of a circle  
          • Find the perimeter of a square  
          • Determine whether two polygons are congruent or similar  
          • Find the unknown measure of an angle in a triangle  
          • Identify a triangle according to its angles  
          • Read and interpret a line graph  

Cumulative Review  
          • Solve word problems  
          • Read a Venn diagram  
          • Demonstrate an understanding of the parts of a circle  
          • Find the perimeter of a square  
          • Determine whether two polygons are congruent or similar  
          • Find the unknown measure of an angle in a triangle  
          • Identify a triangle according to its angles  
          • Read and interpret a line graph  

Cumulative Review  
          • Solve word problems  
          • Read a Venn diagram  
          • Demonstrate an understanding of the parts of a circle  
          • Find the perimeter of a square  
          • Determine whether two polygons are congruent or similar  
          • Find the unknown measure of an angle in a triangle  
          • Identify a triangle according to its angles  
          • Read and interpret a line graph  

Cumulative Review  
          • Solve word problems  
          • Read a Venn diagram  
          • Demonstrate an understanding of the parts of a circle  
          • Find the perimeter of a square  
          • Determine whether two polygons are congruent or similar  
          • Find the unknown measure of an angle in a triangle  
          • Identify a triangle according to its angles  
          • Read and interpret a line graph  

Cumulative Review  
          • Solve word problems  
          • Read a Venn diagram  
          • Demonstrate an understanding of the parts of a circle  
          • Find the perimeter of a square  
          • Determine whether two polygons are congruent or similar  
          • Find the unknown measure of an angle in a triangle  
          • Identify a triangle according to its angles  
          • Read and interpret a line graph  

Cumulative Review  
          • Solve word problems  
          • Read a Venn diagram  
          • Demonstrate an understanding of the parts of a circle  
          • Find the perimeter of a square  
          • Determine whether two polygons are congruent or similar  
          • Find the unknown measure of an angle in a triangle  
          • Identify a triangle according to its angles  
          • Read and interpret a line graph
## Chapter 10: Equations

<table>
<thead>
<tr>
<th>Lesson</th>
<th>Topic</th>
<th>Lesson Objectives</th>
<th>Chapter Materials</th>
</tr>
</thead>
</table>
| 88     | Expressions | • Write a numerical or an algebraic expression for a word phrase  
• Demonstrate an understanding of algebraic expressions with more than one operation  
• Evaluate an expression using substitution  
• Use the Order of Operations to evaluate expressions | Teacher Manipulatives Packet:  
• Shapes Kit (optional)  
• Place Value Kit  
• Variable Cards  
Student Manipulatives Packet:  
• Equation Mat  
• Variable Cards  |
| 89     | Equations | • Demonstrate an understanding of equations  
• Write an equation with two equal expressions  
• Determine the unknown in a word problem and write it as a variable in an equation  
• Evaluate and relate expressions using >, <, or = | Instructional Aids (Teacher's Toolkit CD):  
• Cumulative Review Answer Sheet (page IA9) for each student  
• Variable Cards (page IA45) (optional)  
• Equation Mat (page IA46)  
• Graph an Equation (page IA47)  
• Graph an Equation (page IA47) for each student  |
| 90     | Simplify Expressions | • Demonstrate an understanding of the Commutative and Associative Properties of Addition and of Multiplication  
• Simplify algebraic expressions using manipulatives  
• Apply the Commutative and Associative Properties to simplify algebraic expressions | Christian Worldview Shaping (Teacher’s Toolkit CD):  
• Pages 25–27  |
| 91     | Addition & Subtraction Equations | • Solve addition and subtraction equations using inverse operations  
• Check addition and subtraction equations using substitution | Other Teaching Aids:  
• Round counters for each student and the teacher  |
| 92     | Multiplication Equations | • Solve multiplication equations using division (the inverse operation)  
• Check multiplication equations using substitution  
• Write an equation with a variable to solve a word problem | Math 6 Tests and Answer Key  
Optional (Teacher’s Toolkit CD):  
• Fact Review pages  
• Application pages  
• Calculator Activities  |
| 93     | Multiplication & Division Equations | • Solve multiplication and division equations using inverse operations  
• Check multiplication and division equations using substitution  
• Write an equation with a variable to solve a word problem  
• Demonstrate an understanding of inequalities  
• Picture an inequality on a number line  
• Determine whether a given number is a solution to an inequality |  |
| 94     | Equivalent Expressions | • Demonstrate an understanding of the Distributive Property of Multiplication over Addition  
• Apply the Distributive Property of Multiplication over Addition to find equivalent expressions  
• Solve equations using inverse operations |  |
| 95     | Distance = Rate × Time | • Calculate the distance traveled given the rate and the time, the rate of travel given the distance and the time, and the time traveled given the distance and the rate  
• Complete a table using the formula \( d = r \times t \)  
• Create a line graph relating to the formula \( d = r \times t \) |  |
| 96     | Chapter 10 Review | • Review |  |
| 97     | Chapter 10 Test Cumulative Review | • Read and interpret a bar graph  
• Identify plane figures when given the characteristics  
• Determine the perimeter of a figure  
• Solve a fraction word problem  
• Add, multiply, and divide fractions  
• Find a missing factor  
• Identify the reciprocal of a fraction  
• Multiply and divide decimals  
• Determine the value of an expression  
• Determine the lowest term of a fraction or a mixed number |  |
### Chapter 11: Perimeter & Area

<table>
<thead>
<tr>
<th>Lesson</th>
<th>Topic</th>
<th>Lesson Objectives</th>
<th>Chapter Materials</th>
</tr>
</thead>
</table>
| 98     | Perimeter | • Calculate the perimeter of a polygon using a formula  
       |        | • Calculate the unknown length of a side of a polygon  
       |        | • Solve an algebraic expression to find the perimeter of a rectangle | Teaching Visuals (Teacher’s Toolkit CD):  
       |        | • Chart 6: Polygons  
       |        | • Chart 7: Center Points, Radii & Diameters  
       |        | • Chart 8: Chords & Central Angles  
       |        | • Chart 9: Area  

| 99     | Circumference | • Develop an understanding of the relationship between the diameter and the circumference of a circle  
       |        | • Calculate the circumference of a circle using a formula  
       |        | • Calculate the diameter of a circle given the circumference  
       |        | • Relate circumference to real-life situations | Instructional Aids (Teacher’s Toolkit CD):  
       |        | • Cumulative Review Answer Sheet (page IA9) for each student  
       |        | • Graph Paper (page IA13)  
       |        | • Find the Circumference (page IA48) for each student  
       |        | • Area: Rectangles, Squares & Parallelograms (page IA49)  

| 100    | Area of Rectangles, Squares & Parallelograms | • Calculate the area of rectangles, squares, and parallelograms using a formula  
       |        | • Calculate the area of a complex figure  
       |        | • Calculate the unknown side (length or width) of a rectangle or a square  
       |        | • Relate area to real-life situations | • Area: Rectangles, Squares & Parallelograms (page IA49) for each student  
       |        | • Area: Triangles (page IA50)  
       |        | • Area: Circles (page IA51)  
       |        | • Area: Triangles (page IA50) for each student  
       |        | • Area: Circles (page IA51) for each student  
       |        | • Surface Area: Triangular Prism (page IA52)  
       |        | • Surface Area: Triangular Prism (page IA52) for each student  
       |        | • Surface Area: Triangular Prism (page IA52)  
       |        | • Surface Area: Triangular Prism (page IA52) for each student  

| 101    | Area of Triangles | • Calculate the area of triangles using a formula  
       |        | • Calculate the area of a complex figure  
       |        | • Calculate the unknown height or base of a triangle  
       |        | • Relate area to real-life situations | • Area: Rectangles, Squares & Parallelograms (page IA49) for each student  
       |        | • Area: Triangles (page IA50)  
       |        | • Area: Circles (page IA51)  
       |        | • Area: Triangles (page IA50) for each student  
       |        | • Area: Circles (page IA51) for each student  
       |        | • Surface Area: Triangular Prism (page IA52)  
       |        | • Surface Area: Triangular Prism (page IA52) for each student  

| 102    | Area of Circles | • Calculate the area of a circle using a formula  
       |        | • Estimate the area of a circle  
       |        | • Relate area to real-life situations | • Surface Area: Triangular Prism (page IA52)  
       |        | • Surface Area: Triangular Prism (page IA52) for each student  
       |        | • Surface Area: Triangular Prism (page IA52)  
       |        | • Surface Area: Triangular Prism (page IA52) for each student  

| 103    | Surface Area of Prisms | • Name the 3-dimensional figure that can be formed from a net  
       |        | • Calculate the surface area of rectangular, square, and triangular prisms using formulas  
       |        | • Construct a triangular prism  
       |        | • Relate surface area to real-life situations | • Surface Area (page IA53)  
       |        | • Surface Area (page IA53) for each student  
       |        | • Floor Plan Activity (page IA54)  
       |        | • Floor Plan Activity (page IA54) for each pair of students  
       |        | • Geometry Review I (page IA56)  
       |        | • Geometry Review II (page IA57)  
       |        | • Nets (page IA58)  

| 104    | Surface Area of Cylinders | • Calculate the surface area of rectangular, square, and triangular prisms using formulas  
       |        | • Calculate the surface area of a cylinder using formulas  
       |        | • Construct a cylinder net  
       |        | • Relate surface area to real-life situations | • Floor Plan Grid (page IA55) for each pair of students  
       |        | • Geometry Review I (page IA56)  
       |        | • Geometry Review II (page IA57)  
       |        | • Nets (page IA58)  

| 105    | Fixed Areas | • Recognize that perimeter can vary for a fixed area  
       |        | • Calculate the area and perimeter of a rectangle  
       |        | • Calculate the area of a complex figure  
       |        | • Create a basic floor plan from a fixed area  
       |        | • Relate geometry to real-life situations | Christian Worldview Shaping (Teacher’s Toolkit CD):  
       |        | • Pages 28–29  

| 106    | Chapter 11 Review | • Review |  

| 107    | Chapter 11 Test Cumulative Review | • Identify prime and composite numbers  
       |        | • Use the guess-and-check strategy to solve problems  
       |        | • Identify equivalent expressions  
       |        | • Estimate products and sums  
       |        | • Identify all the factors of a number  
       |        | • Add and multiply decimals  
       |        | • Determine the value of a variable  
       |        | • Read and interpret a pictograph  
       |        | • Read and interpret a Venn Diagram | Other Teaching Aids:  
       |        | • A cereal box (rectangular prism) for every 2 to 3 students and the teacher  
       |        | • A 12-inch length of string for each pair of students  
       |        | • A cylindrical object, such as a can or mug, for each pair of students  
       |        | • A cylinder (potato chip container with top, a can, or similar object) for each student  
       |        | • A small oatmeal container (optional)  
       |        | • A classroom set of 3-dimensional objects (See Lesson 59.)  
       |        | • A sheet of 12 × 18 construction paper for each pair of students  
       |        | • 1–2 sheets of construction paper for each student  
       |        | • Two 12 × 18 sheets of construction paper  
       |        | • A calculator for each student  
       |        | • A ruler for each student and the teacher  

Math 6, 3rd Edition—Lesson Plan Overview

<table>
<thead>
<tr>
<th>Math 6 Tests and Answer Key</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optional (Teacher’s Toolkit CD):</td>
</tr>
<tr>
<td>• Fact Review pages</td>
</tr>
<tr>
<td>• Application pages</td>
</tr>
<tr>
<td>• Calculator Activities</td>
</tr>
</tbody>
</table>

• Transparent tape for each student and the teacher
# Chapter 12: Volume

<table>
<thead>
<tr>
<th>Lesson</th>
<th>Topic</th>
<th>Lesson Objectives</th>
<th>Chapter Materials</th>
</tr>
</thead>
</table>
| 108    | Volume of Rectangular Prisms | • Develop an understanding of volume  
• Find the volume of a rectangular prism using a model  
• Calculate the volume of a rectangular prism using a formula  
• Relate volume to real-life situations | Instructional Aids (Teacher’s Toolkit CD):  
• Cumulative Review Answer Sheet (page IA9) for each student  
• Triangular Prisms & Cylinders (page IA59)  
• Fixed Volume (page IA60)  
• Fixed Volume (page IA60) for each group of students  
• Volume Review (page IA61)  
• Volume Review (page IA61) for each student  
• Volume Word Problems, page IA62 |
| 109    | Volume of Cubes | • Develop an understanding of the volume of a cube (square prism)  
• Find the volume of a cube using a model  
• Calculate the volume of a cube using a formula  
• Calculate the unknown measurement of a rectangular prism  
• Relate volume to real-life situations | Christian Worldview Shaping (Teacher’s Toolkit CD):  
• Page 30  
Other Teaching Aids:  
• A clear storage container with lid (shoebox size)  
• Cube-shaped blocks  
• Several 8 ½ × 11 blank sheets of paper  
• A rectangular prism-shaped block  
• A clear cube-shaped container with lid  
• A calculator for each student  
• A ruler for each student and the teacher  
• Four 9 × 12 sheets of construction paper for each group of students and the teacher  
• Transparent tape for each group of students and the teacher  
• 6 cups of rice, unpopped popcorn, or dried beans for each group of students and the teacher  
• A box lid or rectangular pan for each group of students and the teacher  
• A 1-cup liquid measuring cup for each group of students and the teacher |
| 110    | Volume of Other 3-D Figures | • Find the volume of an irregular prism using a model  
• Calculate the volume of a triangular prism and of a cylinder using formulas  
• Relate volume to real-life situations |  
| 111    | Fixed Volumes & Fixed Lateral Surfaces | • Recognize that surface area can vary for a fixed volume  
• Calculate the volume and the lateral surface area of a rectangular prism and of a cylinder using formulas  
• Recognize that volume can vary for a fixed lateral surface area | Math 6 Tests and Answer Key  
Optional (Teacher’s Toolkit CD):  
• Fact Review pages  
• Application pages  
• Calculator Activities |
| 112    | Chapter 12 Review | • Review |  
| 113    | Chapter 12 Test Cumulative Review | • Add, subtract, multiply, and divide whole numbers, decimals, and fractions  
• Rename a fraction as a decimal  
• Identify the ordered pair for a point on a coordinate plane  
• Determine the radius and the diameter of a circle  
• Identify the formula used to find the area of a circle  
• Identify geometric figures: a parallelogram, parallel lines, perpendicular lines  
• Classify angles as acute, obtuse, or right  
• Read and interpret a line plot |  

# Math 6, 3rd Edition—Lesson Plan Overview

## Chapter 13: Ratios, Proportions & Percents

<table>
<thead>
<tr>
<th>Lesson</th>
<th>Topic</th>
<th>Lesson Objectives</th>
<th>Chapter Materials</th>
</tr>
</thead>
</table>
| 114 | Ratios & Rates | • Write a ratio in three forms: word form, ratio form, fraction form  
• Write ratios to describe part-to-part, part-to-whole, and whole-to-part comparisons  
• Find equivalent ratios  
• Determine the unit rate  
• Find an equivalent ratio using the unit rate  
• Use ratios to represent real-life situations and to solve problems | Teacher Manipulatives Packet:  
• Shapes Kit  
• Place Value Kit  
Student Manipulatives Packet:  
• Black and red counters  
Instructional Aids (Teacher’s Toolkit CD):  
• Cumulative Review Answer Sheet (page IA9) for each student  
• Graph Paper (page IA13)  
• Graph Paper (page IA13) for each student  
• Parent Letter (page IA63), a half page for each student  
• Pictured Ratios (page IA64)  
• Ratio Tables (page IA65)  
• Missing Measurements (page IA66)  
• Percent (page IA67)  
• Percent Models: Find the Part (page IA68)  
• Percent Models: Find the Whole (page IA69)  
• Circle Graph: Elements in the Earth’s Crust (page IA70)  
Christian Worldview Shaping (Teacher’s Toolkit CD):  
• Pages 31–32  
Other Teaching Aids:  
• A map  
• Samples of floor plans  
• Modeling clay  
• A calculator for each student  
• A map for each group of students (optional)  
• A ruler for each student and the teacher (optional)  
Math 6 Tests and Answer Key  
Optional (Teacher’s Toolkit CD):  
• Fact Review pages  
• Application pages  
• Calculator Activities |
| 115 | Ratio Tables | • Complete a ratio table  
• Find equivalent ratios  
• Make a ratio table  
• Solve problems using ratio tables  
• Use ratios to represent real-life situations and to solve problems |  
| 116 | Solving Proportions | • Develop an understanding of proportions using models  
• Determine whether two ratios are proportional  
• Solve for a missing term in a proportion  
• Use ratios to represent real-life situations and to solve problems |  
| 117 | Similar Figures | • Develop an understanding of proportions in similar figures  
• Solve for a missing term in a proportion  
• Find the unknown measure in similar figures using proportions  
• Use indirect measurement to find the unknown measure in similar objects  
• Use ratios to represent real-life situations and to solve problems |  
| 118 | Scale | • Find actual measurements using a scale and a scale drawing, map, or model  
• Determine the unknown measure on a scale drawing given the scale and the actual measurement  
• Solve word problems using ratios |  
| 119 | Percent | • Develop an understanding of percent using models  
• Express percents as ratios, decimals, and fractions in lowest terms  
• Express decimals and fractions as percents  
• Compare percents to decimals and fractions using >, <, or =  
• Solve percent word problems using proportions |  
| 120 | Finding Percent of a Number | • Find a percent of a number using an equation, a model, and a proportion  
• Solve percent word problems |  
| 121 | Finding the Unknown Whole | • Find the unknown whole in a percent problem using a model, an equation, and a proportion  
• Solve percent word problems |  
| 122 | Speed, Distance & Time | • Calculate the distance given the rate of speed and the time, the rate of speed given the distance and the time, and the time given the distance and the rate of speed  
• Rename to calculate distance, rate of speed, or time  
• Find an equivalent rate using a proportion |  
| 123 | Chapter 13 Review | • Review |  
| 124 | Chapter 13 Test Cumulative Review | • Read and interpret a circle graph  
• Solve word problems  
• Simplify square roots, exponents, and expressions |
| • Solve for a missing term in a proportion |
| • Calculate the area of a complex figure |
| • Calculate the circumference of a circle |
| • Calculate the volume of a cylinder |
| • Identify the equation for the area of a rectangular prism and a triangle |
# Math 6, 3rd Edition—Lesson Plan Overview

## Chapter 14: Measurement

<table>
<thead>
<tr>
<th>Lesson</th>
<th>Topic</th>
<th>Lesson Objectives</th>
<th>Chapter Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>125</td>
<td>Linear Measurement</td>
<td>• Demonstrate an understanding of linear units: inch, foot, yard, and mile &lt;br&gt; • Estimate measurements using benchmarks &lt;br&gt; • Measure to the nearest inch, half inch, fourth inch, eighth inch, and sixteenth inch &lt;br&gt; • Convert linear measurements to smaller or larger units &lt;br&gt; • Find a fraction of a measurement unit &lt;br&gt; • Add and subtract linear measurements</td>
<td>Teaching Visuals (Teacher’s Toolkit CD):&lt;br&gt; • Chart 10: Customary Measurement&lt;br&gt; • Chart 11: Metric Measurement&lt;br&gt; • Chart 12: Metric Measurement: Length &amp; Distance&lt;br&gt; • Chart 13: Metric Measurement: Capacity&lt;br&gt; • Chart 14: Metric Measurement: Mass&lt;br&gt; • Chart 15: Customary &amp; Metric Conversions&lt;br&gt; • Chart 16: Time Measurement&lt;br&gt; Teacher Manipulatives Packet:&lt;br&gt; • Measurement Flashcards&lt;br&gt; • Rulers: Measuring Tape (yard) (optional)</td>
</tr>
<tr>
<td>126</td>
<td>Weight &amp; Capacity</td>
<td>• Demonstrate an understanding of units of weight: pound, ounce, and ton &lt;br&gt; • Read a spring scale &lt;br&gt; • Demonstrate an understanding of units of capacity: fluid ounce, cup, pint, quart, and gallon &lt;br&gt; • Convert weight and capacity measurements to smaller or larger units &lt;br&gt; • Find a fraction of a measurement unit &lt;br&gt; • Add and subtract weight and capacity measurements</td>
<td></td>
</tr>
<tr>
<td>127</td>
<td>Metric Linear Measurement</td>
<td>• Develop an understanding of the metric system &lt;br&gt; • Develop an understanding of metric linear units: kilometer, meter, centimeter, and millimeter &lt;br&gt; • Estimate and measure to the nearest meter, centimeter, and millimeter &lt;br&gt; • Determine the appropriate linear unit &lt;br&gt; • Convert metric linear measurements to smaller or larger units &lt;br&gt; • Find a fraction of a measurement unit &lt;br&gt; • Compare metric linear measurements using &gt; or &lt; &lt;br&gt; • Add and subtract metric linear measurements</td>
<td></td>
</tr>
<tr>
<td>128</td>
<td>Metric Capacity &amp; Mass</td>
<td>• Develop an understanding of metric units of capacity: liter and milliliter &lt;br&gt; • Develop an understanding of metric units of mass: gram, kilogram, and milligram &lt;br&gt; • Convert metric capacity and mass measurements to smaller or larger units &lt;br&gt; • Add and subtract metric capacity and mass measurements</td>
<td></td>
</tr>
<tr>
<td>129</td>
<td>Customary &amp; Metric</td>
<td>• Add, subtract, multiply, and divide measurements &lt;br&gt; • Solve measurement word problems &lt;br&gt; • Find a fraction of a measurement</td>
<td></td>
</tr>
<tr>
<td>130</td>
<td>Fahrenheit &amp; Celsius</td>
<td>• Recognize degree as a measuring unit for temperature &lt;br&gt; • Recognize that °C represents degrees Celsius and °F represents degrees Fahrenheit &lt;br&gt; • Identify standard Celsius and Fahrenheit temperatures &lt;br&gt; • Determine the more reasonable temperature &lt;br&gt; • Read and set a Celsius and a Fahrenheit thermometer &lt;br&gt; • Determine the amount of increase or decrease between two temperatures &lt;br&gt; • Measure temperature using a thermometer &lt;br&gt; • Convert temperatures: Celsius to Fahrenheit and Fahrenheit to Celsius</td>
<td></td>
</tr>
<tr>
<td>131</td>
<td>Relate Customary &amp; Metric Units</td>
<td>• Recognize approximate equivalencies between customary and metric units of measurement &lt;br&gt; • Compare customary and metric measurements &lt;br&gt; • Estimate conversions between customary and metric measurements</td>
<td></td>
</tr>
<tr>
<td>132</td>
<td>Telling &amp; Renaming Time</td>
<td>• Identify equivalent units of time &lt;br&gt; • Tell and write time to the minute</td>
<td></td>
</tr>
</tbody>
</table>
## Math 6, 3rd Edition—Lesson Plan Overview

<table>
<thead>
<tr>
<th>Page</th>
<th>Lesson Title</th>
<th>Overview</th>
<th>Other Teaching Aids</th>
</tr>
</thead>
</table>
| 133  | Elapsed Time & Time Zones | • Demonstrate an understanding of world time zones  
• Determine the elapsed time  
• Add and subtract time | • A ruler for each student and the teacher  
• A transparent ruler  
• A yardstick  
• A tape measure  
• A spring scale  
• A 1-lb loaf of bread with 16 1-oz slices or 1 lb of cheese with 16 1-oz slices  
• Objects to be weighed  
• Containers: four 1-cup, four 1-pint, four 1-quart, two 1-gallon  
• 2 gallons of water  
• A meter stick  
• Clearview Liter Cube Set  
• A 1-liter beaker or metric measuring container  
• A balance or a metric scale  
• A 1-liter bottle of water for each student and the teacher  
• Objects that fit in your hand  
• 6 thermometers of various types  
• Judy Clock  
• A toy that changes shape for each group of students |
| 134  | Rename Units of Measure | • Estimate customary and metric measurements of objects  
• Convert measurements to smaller or larger units  
• Compare customary and metric units of measurement  
• Add, subtract, multiply, and divide measurements  
• Solve measurement word problems  
• Determine mileage using a map scale  
• Convert temperatures: Celsius to Fahrenheit and Fahrenheit to Celsius  
• Identify standard temperatures  
• Determine the time in various time zones | |
| 135  | Unit Multipliers | • Write an equivalency as a unit multiplier  
• Determine the missing term in a unit multiplier  
• Convert measurements using a unit multiplier | |
| 136  | Chapter 14 Review | • Review | |
| 137  | Chapter 14 Test  
Cumulative Review | • Read and interpret a line graph  
• Round numbers to a given place  
• Estimate a quotient or a sum  
• Simplify an expression using substitution  
• Determine the value of a variable in an expression or an equation  
• Identify common factors and common multiples of two numbers  
• Demonstrate an understanding of a circle: diameter, radius, and chord | |

### Optional (Teacher’s Toolkit CD):
- Fact Review pages
- Application pages
- Calculator Activities
# Chapter 15: Statistics

<table>
<thead>
<tr>
<th>Lesson</th>
<th>Topic</th>
<th>Lesson Objectives</th>
<th>Chapter Materials</th>
</tr>
</thead>
</table>
| 138    | Statistics | • Complete a frequency table using given data  
• Determine the range, median, and mode for a set of data  
• Calculate the mean for a set of data | Teaching Visuals (Teacher’s Toolkit CD):  
• Chart 17: Histogram  
• Chart 18: Box-and-Whisker Plot |
| 139    | Double Bar & Double Line Graphs | • Read and interpret a double bar graph and a double line graph  
• Determine the range, median, and mode for a set of data  
• Calculate the mean for a set of data | Instructional Aids (Teacher’s Toolkit CD):  
• Cumulative Review Answer Sheet (page IA9) for each student  
• Frequency Tables (page IA80) for each student  
• Double Bar Graph (page IA81) for each student  
• Double Line Graph (page IA82) for each student |
| 140    | Stem-and-Leaf Plots | • Read and interpret a stem-and-leaf plot  
• Complete a stem-and-leaf plot  
• Determine the range, median, and mode for a set of data  
• Calculate the mean for a set of data | |
| 141    | Line Plots | • Read and interpret a line plot  
• Record data on a line plot  
• Demonstrate an understanding of a cluster, a gap, and an outlier  
• Determine the effects of an outlier | |
| 142    | Histograms | • Read and interpret a histogram  
• Complete a frequency table using given data  
• Construct a histogram using given data | |
| 143    | Box-and-Whisker Plot | • Develop an understanding of box-and-whisker plots  
• Determine the lower, middle, and upper quartiles of a set of data  
• Construct a box-and-whisker plot using given data | |
| 144    | Graph Review | • Read and interpret graphs: double bar graph, double line graph, stem-and-leaf plot, line plot, histogram, box-and-whisker plot | |
| 145    | Compare Graphs | • Calculate the mean for a set of data  
• Determine the range, median, and mode for a set of data  
• Record data in a frequency table  
• Choose a graph to display a set of data | |
| 146    | Chapter 15 Review | • Review | |
| 147    | Chapter 15 Test Cumulative Review | • Add, subtract, multiply, and divide whole numbers, decimals, and fractions  
• Find the value of a variable in an equation  
• Add customary measurements  
• Convert customary measurements  
• Express a percent as a fraction in lowest terms  
• Find the decimal equivalent of a fraction  
• Identify the value of a digit in a decimal  
• Round to estimate the difference  
• Express a fraction as a percent  
• Measure a line to the nearest sixteenth inch  
• Identify a chord and a diameter in a circle  
• Find the unknown measure of an angle in a pair of supplementary angles and in a triangle  
• Calculate the volume of a cylinder | Christian Worldview Shaping (Teacher’s Toolkit CD):  
• Page 35  

Other Teaching Aids:  
• A calculator for each student  
• A ruler for each student and the teacher  

Math 6 Tests and Answer Key  
Optional (Teacher’s Toolkit CD):  
• Fact Review pages  
• Application pages  
• Calculator Activities |
### Chapter 16: Probability

<table>
<thead>
<tr>
<th>Lesson</th>
<th>Topic</th>
<th>Lesson Objectives</th>
<th>Chapter Materials</th>
</tr>
</thead>
</table>
| 148    | Theoretical Probability | • Develop an understanding of probability  
• Write probability as a fraction, a decimal, and a percent  
• Find the theoretical probability of an event and its complement | Instructional Aids (Teacher’s Toolkit CD):  
• Cumulative Review Answer Sheet (page IA9) for each student  
• Probability (page IA93) for each student  
• Probability (page IA93) for each student  
• Theoretical Probability (page IA94)  
• Sample Spaces (page IA95)  
• Tree Diagram (page IA96)  
• Tree Diagram (page IA96) for each student  
• Multiplication Counting Principle (page IA97)  
• Experimental Probability (page IA98)  
• Experimental Probability (page IA98) for each student  
• Spinning Penny Experiment (page IA99) for each pair of students (optional)  
• Fair or Unfair Games (page IA100)  
• Fair or Unfair Games (page IA100) for each group of students (optional)  
• Probability Spinner (page IA101)  
• Probability Spinner (page IA101) for each student |
| 149    | Sample Spaces | • Find the sample space for and the probability of an event  
• Make a tree diagram to list the sample space for an event  
• Determine the number of possible outcomes using the Multiplication Counting Principle  
• Find the theoretical probability of an event | |
| 150    | Experimental Probability | • Find the theoretical probability of an event  
• Predict the results of an experiment using the theoretical probability of an event  
• Conduct a probability experiment  
• Find the experimental probability of an event  
• Create a line plot for the results of an experiment | |
| 151    | Fair or Unfair? | • Determine whether a game is fair or unfair using probability  
• Conduct a probability experiment  
• Find the experimental probability and the theoretical probability of an event  
• List the sample space for an event  
• Make predictions using probability | |
| 152    | Independent & Dependent Events | • Differentiate between independent and dependent compound events  
• Find the probability of compound events using a formula | Christian Worldview Shaping (Teacher’s Toolkit CD):  
• Pages 36 |
| 153    | Chapter 16 Review | • Review | Other Teaching Aids:  
• Colored markers: red and blue  
• Colored pencils or crayons: red and blue for each student  
• A calculator (optional) for each student  
• A paper clip for each student and the teacher  
• A penny for every two students (optional)  
• 6 Unifix Cubes: 4 orange, 1 brown, 1 yellow  
• An opaque bag  
• Two 1–6 number cubes  
• Two 1–6 number cubes for each group of students (optional) |
| 154    | Chapter 16 Test Cumulative Review | • Identify the standard form of a number written in exponent form  
• Round a decimal to a given place  
• Estimate the location of a fraction on a number line  
• Classify figures as congruent  
• Identify the type of triangle  
• Solve measurement and money word problems  
• Find the mean of data on a chart  
• Find the unknown measure for similar figures  
• Find an equivalent fraction or ratio  
• Determine the least common multiple  
• Divide fractions and whole numbers  
• Estimate the sum of mixed numbers  
• Simplify an expression using the Order of Operations  
• Multiply decimals  
• Read and interpret a stem-and-leaf plot | Math 6 Tests and Answer Key  
Optional (Teacher’s Toolkit CD):  
• Fact Review pages  
• Application pages  
• Calculator Activities |
## Chapter 17: Statistics

<table>
<thead>
<tr>
<th>Lesson</th>
<th>Topic</th>
<th>Lesson Objectives</th>
<th>Chapter Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>155</td>
<td>Integers</td>
<td>• Demonstrate an understanding of integers&lt;br&gt;• Find the absolute value of a number&lt;br&gt;• Compare and order integers</td>
<td>Teacher Manipulatives Packet:&lt;br&gt;• Thermometer&lt;br&gt;• Red Strip</td>
</tr>
<tr>
<td>156</td>
<td>Add Integers</td>
<td>• Add integers using manipulatives&lt;br&gt;• Add integers using a number line&lt;br&gt;• Write an addition equation for a word problem</td>
<td>Student Manipulatives Packet:&lt;br&gt;• Algebra Mat Kit&lt;br&gt;• Thermometer&lt;br&gt;• Red Strip</td>
</tr>
<tr>
<td>157</td>
<td>Subtract Integers</td>
<td>• Subtract integers using manipulatives&lt;br&gt;• Subtract integers using a number line&lt;br&gt;• Write a subtraction equation for a word problem</td>
<td>Instructional Aids (Teacher’s Toolkit CD):&lt;br&gt;• Positive &amp; Negative Number Line (page IA4)&lt;br&gt;• Cumulative Review Answer Sheet (page IA9) for each student&lt;br&gt;• Coordinate Plane (page IA24)&lt;br&gt;• Coordinate Planes (page IA25) for each student&lt;br&gt;• Algebra Mat (page IA102)&lt;br&gt;• Positive &amp; Negative Number Lines (page IA103) 2 copies for each student&lt;br&gt;• Subtraction Patterns (page IA104)&lt;br&gt;• Subtraction Patterns (page IA104) for each student&lt;br&gt;• More Subtraction Patterns (page IA105)&lt;br&gt;• Multiplication Patterns (page IA106)&lt;br&gt;• Order of Operations (page IA107)&lt;br&gt;• Order of Operations (page IA107) for each student&lt;br&gt;Christian Worldview Shaping (Teacher’s Toolkit CD):&lt;br&gt;• Page 37–39&lt;br&gt;Other Teaching Aids:&lt;br&gt;• Plastic counters: opaque (to appear black when placed on the Algebra Mat) and transparent red Math 6 Tests and Answer Key&lt;br&gt;Optional (Teacher’s Toolkit CD):&lt;br&gt;• Fact Review pages&lt;br&gt;• Application pages&lt;br&gt;• Calculator Activities</td>
</tr>
<tr>
<td>158</td>
<td>Add &amp; Subtract Integers</td>
<td>• Subtract integers&lt;br&gt;• Add and subtract integers using a number line and manipulatives&lt;br&gt;• Demonstrate an understanding of the relationship between subtracting an integer and adding its opposite&lt;br&gt;• Write an equation for a word problem</td>
<td></td>
</tr>
<tr>
<td>159</td>
<td>More Integers</td>
<td>• Solve real-life word problems&lt;br&gt;• Add and subtract integers&lt;br&gt;• Write an equation for a word problem</td>
<td></td>
</tr>
<tr>
<td>160</td>
<td>Multiply Integers</td>
<td>• Multiply integers using manipulatives&lt;br&gt;• Write an equation for a word problem</td>
<td></td>
</tr>
<tr>
<td>161</td>
<td>Multiply &amp; Divide Integers</td>
<td>• Multiply and divide integers&lt;br&gt;• Write an equation for a word problem</td>
<td></td>
</tr>
<tr>
<td>162</td>
<td>Mixed Review</td>
<td>• Add, subtract, multiply, and divide integers&lt;br&gt;• Subtract integers by adding the opposite&lt;br&gt;• Apply the order of operations to integers</td>
<td></td>
</tr>
<tr>
<td>163</td>
<td>Coordinate Plane</td>
<td>• Graph points on a four-quadrant coordinate plane&lt;br&gt;• Write ordered pairs to identify points on a four-quadrant coordinate plane</td>
<td></td>
</tr>
<tr>
<td>164</td>
<td>Chapter 17 Review</td>
<td>• Review</td>
<td></td>
</tr>
<tr>
<td>165</td>
<td>Chapter 17 Test Cumulative Review</td>
<td>• Read and interpret a double line graph&lt;br&gt;• Identify the geometric figure&lt;br&gt;• Find the area of a parallelogram&lt;br&gt;• Find the surface area and volume of a rectangular prism&lt;br&gt;• Calculate the unknown measure of an angle&lt;br&gt;• Estimate an answer&lt;br&gt;• Solve fraction problems</td>
<td></td>
</tr>
</tbody>
</table>