

Scope and Sequence  
6th Grade

***Excel***  
**Math**

***AnsMar Publishers, Inc.***

**(K-6) CURRICULUM**

# Scope and Sequence

by lesson number

## PLACE VALUE AND COUNTING

### Place Value

- 1 Recognizing numbers less than a million
- 24 Recognizing places up through trillions
- 24 Recognizing numbers given in expanded notation
- 35 Recognizing tenths and hundredths places
- 61 Recognizing the thousandths place
- 95 Recognizing decimal places to the right of the thousandths

### Number Words

- 1 Recognizing numbers words less than a million
- 1 Recognizing ordinal number words up to 100
- 1 Recognizing money number words
- 24 Recognizing numbers up through trillions
- 35 Recognizing decimal number words
- 54 Recognizing Roman Numerals: I, V, X, L, C, D and M

### Number Sequences and Patterns

- 2 Filling in missing numbers in sequences counting by numbers from 1 to 12
- 73 Filling in missing numbers in a sequence of decimal numbers
- 84 Filling in missing numbers in sequences counting by varying amounts
- 149 Determining number patterns

### Arrangement of Numbers in Order

- 2 Arranging 4 four-digit numbers in order from least to greatest and greatest to least
- 22 Putting simple fractions in order from least to greatest and greatest to least
- 74 Putting decimal numbers in order from least to greatest and greatest to least
- 119 Arranging fractions, decimals and mixed numbers on a number line

## ADDITION AND SUBTRACTION

- 1 Adding 4 four-digit numbers with regrouping
- 1 Recognizing addition and subtraction fact families
- 1 Subtracting four-digit numbers with regrouping
- 37 Learning the Commutative and Associative Properties of Addition

## MULTIPLICATION

### Multiplication Facts

- 1 Learning multiplication facts with products up to 81
- 1 Learning multiplication facts with products less than 100 with 10, 11 or 12 as a factor
- 1 Recognizing multiples
- 6 Recognizing multiplication and division fact families
- 17 Determining the lowest common multiple
- 17 Learning multiplication facts with products with 11 (to 121) or 12 (to 144) as a factor

### Single or Multi-digit Multiplier

- 1 Multiplying by a one-digit multiplier
- 12 Multiplying by a two-digit multiplier
- 122 Multiplying a three-digit number by a three-digit number

### Other

- 6 Learning the terminology for multiplication
- 37 Learning about the Distributive, Associative and Commutative Properties of Multiplication

## DIVISION

### Division Facts

- 6 Recognizing multiplication and division fact families
- 6 Learning division facts with dividends up through 81 and dividends that are multiples of 10 (to 90), 11 (to 99) or 12 (to 96)
- 9 Learning division facts with remainders with dividends up through 81
- 9 Solving word problems involving division with remainders
- 17 Learning division facts with dividends with 11 (to 121) or 12 (to 144) as a factor
- 50 Determining factors, prime numbers, composite numbers and prime factors
- 56 Determining the greatest common factor and lowest common factor

### Single or Multi-digit Divisor

- 6 Dividing a one-digit divisor into three-digit dividend with a two- or three-digit quotient with no regrouping or remainders
- 16 Dividing a one-digit divisor into a three-digit dividend with a two-digit quotient with regrouping and remainders
- 26 Dividing a two-digit divisor into a dividend less than 100 with remainders

# Scope and Sequence

by lesson number

- 38 Dividing a one-digit divisor into a four-digit dividend with a three-digit quotient
- 62 Dividing a two-digit divisor into a three-digit dividend with a two-digit quotient
- 81 Calculating decimal answers in division problems when zeroes need to be added to the right of the dividend
- 82 Dividing using short division
- 103 Dividing a three-digit divisor into a three-digit dividend with a one-digit quotient
- 107 Simplifying division problems using powers of ten
- 132 Dividing a two-digit divisor into a three-digit dividend with a one-digit quotient
- 136 Dividing a three-digit divisor into a four-digit dividend with a two-digit quotient
- 147 Dividing a three-digit divisor into a four-digit dividend with a one-digit quotient

## **Other**

- 6 Learning the terminology for division

## **FRACTIONS**

### **Fractional Parts**

- 5 Defining numerator and denominator
- 5 Determining the fractional part of a group of items when modeled or given in words, sometimes with extraneous information or the word “not”
- 5 Learning that the whole is the sum of its parts
- 19 Computing  $\frac{1}{2}$  to  $\frac{1}{9}$  of a group of items
- 120 Calculating averages involving fractions

### **Addition and Subtraction**

- 5 Adding and subtracting fractions and mixed numbers with like denominators
- 28 Adding and subtracting fractions with unlike denominators
- 39 Adding and subtracting fractions in word problems
- 57 Solving equations involving fractions
- 106 Subtracting fractions with like denominators with regrouping
- 146 Subtracting mixed numbers and fractions with unlike denominators with regrouping

### **Multiplication and Division**

- 18 Determining equivalent fractions using models, money, multiplication or division
- 85 Multiplying fractions and whole numbers by fractions

- 101 Determining reciprocals
- 104 Multiplying mixed numbers
- 112 Using multiplication and division to simplify fraction multiplication problems
- 112 Simplifying fractions before multiplying
- 117 Solving word problems involving the multiplication of fractions and mixed numbers
- 118 Dividing fractions
- 142 Dividing mixed numbers
- 153 Solving word problems involving division of mixed numbers
- 154 Estimating answers to division word problems

### **Comparison of Fractions**

- 22 Determining the fraction with the greatest or least value in a set of fractions
- 27 Determining the fraction with the greatest or least value in a set of fractions
- 47 Comparing fractions with unlike denominators in less and greater than problems and in true and not true number statements by setting up equivalent fractions
- 78 Selecting an equivalent fraction
- 87 Comparing fractions in word problems
- 90 Selecting the fraction that best represents a shaded region
- 119 Arranging fractions, decimal numbers and mixed numbers on a number line

### **Conversion of Fractions**

- 27 Converting an improper fraction to a mixed or whole number
- 35 Writing mixed numbers as decimal numbers
- 35 Writing decimal numbers as mixed numbers
- 44 Converting fractions and decimal numbers to percents by setting up equivalent fractions
- 46 Converting mixed numbers to decimal numbers by setting up equivalent fractions
- 48 Converting improper fractions as part of mixed numbers
- 66 Calculating equivalent ratios
- 83 Converting mixed numbers to improper fractions
- 113 Converting decimal numbers to lowest terms fractions or mixed numbers
- 128 Converting fractions to decimal numbers using division
- 129 Converting fractions to percents

# Scope and Sequence

by lesson number

## **Simplification of Fractions**

- 57 Simplifying fractions
- 62 Simplifying fraction answers
- 78 Simplifying improper fractions as part of mixed number answers
- 93 Reducing improper fraction answers to their lowest terms
- 99 Writing probabilities as lowest-terms fractions
- 123 Rounding mixed numbers

## **MONEY**

- 1 Adding, subtracting and multiplying whole numbers and money amounts with regrouping
- 1 Recognizing money number words
- 1 Calculating change using the least number of coins
- 6 Dividing three-digit money amounts by a one-digit divisor with a two- or three-digit quotient with no regrouping or remainders
- 31 Dividing dollars by dollars
- 49 Rounding money amounts and decimal numbers to the nearest dollar or whole number
- 72 Calculating cost per unit
- 86 Estimating to the nearest dollar or whole number
- 110 Solving word problems involving sales tax, sale price, interest and profit
- 151 Comparing the value of products using different currencies
- 152 Calculating and comparing cost per unit

## **DECIMALS**

### **Place Value**

- 35 Recognizing tenths and hundredths places
- 35 Recognizing decimal number words
- 61 Recognizing the thousandths place
- 73 Filling in missing numbers in a sequence of decimal numbers
- 95 Recognizing decimal places to the right of the thousandths

### **Addition and Subtraction**

- 35 Adding and subtracting decimal numbers
- 61 Solving equations involving decimals

### **Multiplication and Division**

- 51 Multiplying decimal numbers
- 52 Dividing a decimal number by a whole number
- 81 Calculating decimal answers in division problems when zeroes need to be added to the right of the dividend

- 95 Multiplying decimal numbers when zeroes need to be added to the product
- 102 Multiplying and dividing decimal numbers by powers of ten
- 120 Calculating averages involving decimal numbers
- 138 Dividing a decimal number by a decimal number

## **Comparison of Decimals**

- 53 Comparing decimal numbers in less than and greater than problems
- 74 Evaluating decimal numbers in true and not true number statements
- 74 Putting decimal numbers in order from least to greatest and greatest to least
- 90 Selecting the decimal number that best represents a shaded region
- 119 Arranging fractions, decimal numbers and mixed numbers on a number line

## **Conversion of Decimals**

- 35 Writing decimal numbers as mixed numbers
- 35 Writing mixed numbers as decimal numbers
- 44 Converting fractions and decimal numbers to percents by setting up equivalent fractions
- 46 Converting mixed numbers to decimal numbers by setting up equivalent fractions
- 52 Converting percents to decimal numbers
- 111 Converting decimal numbers to percents and percents to decimal numbers
- 113 Converting decimal numbers to lowest terms fractions or mixed numbers
- 128 Converting fractions to decimal numbers using division

## **Estimation**

- 49 Rounding money amounts and decimal numbers to the nearest dollar or whole number
- 61 Rounding decimal numbers to the nearest tenth or hundredth
- 61 Solving equations involving decimal numbers

## **Other**

- 79 Solving word problems involving decimals
- 120 Calculating averages involving decimal numbers and fractions

# Scope and Sequence

by lesson number

## PERCENT

- 44 Converting fractions and decimals to percents by setting up equivalent fractions
- 52 Converting percents to decimal numbers
- 67 Determining percent in a word problem
- 71 Computing the percent of a whole number, money amount or decimal number
- 90 Selecting the percent that best represents a shaded region
- 94 Solving problems using data displayed as percent pie graphs
- 98 Selecting the most reasonable answer involving percents
- 105 Solving word problems involving percent, including the word “not”
- 110 Solving word problems involving sales tax, sale price, interest and profit
- 111 Converting decimal numbers to percents and percents to decimal numbers
- 116 Determining percent of a whole number
- 127 Calculating percents in word problems
- 129 Converting fractions to percents
- 135 Determining percents that are greater than 100% or less than 1%
- 140 Calculating percents in word problems, rounding to the nearest whole percent

## TIME - CLOCK

- 13 Learning 60 minutes = 1 hour
- 13 Telling time to the minute
- 13 Calculating minutes before the hour
- 13 Calculating elapsed time (hours) involving AM and PM
- 13 Recognizing a quarter past or before the hour and half past the hour
- 43 Calculating elapsed time in minutes across the 12 on a clock

## TIME - CALENDAR

- 4 Computing the date within the month
- 4 Learning the abbreviations for days and months
- 4 Learning 7 days = 1 week
- 4 Learning 1 year = 12 months
- 4 Learning the number of days in each month
- 41 Learning the equivalent for one year in days and in weeks
- 41 Learning about leap year
- 41 Calculating elapsed time crossing months within a week
- 92 Calculating elapsed time more than one week crossing months

## ODD AND EVEN NUMBERS

- 19 Recognizing odd and even numbers less than 1,000

## WORD PROBLEMS

### Addition and Subtraction

- 1 Solving multi-step word problems using addition, subtraction and multiplication with regrouping
- 20 Estimating the answers for addition, subtraction and multiplication word problems using rounding to the nearest ten, hundred or thousand
- 20 Estimating range for an answer
- 39 Adding and subtracting fractions in word problems

### Multiplication and Division

- 1 Solving multi-step word problems using addition, subtraction and multiplication
- 6 Solving multi-step word problems using division
- 9 Solving word problems involving division with remainders
- 20 Estimating the answers for addition, subtraction and multiplication word problems using rounding to the nearest ten, hundred or thousand
- 20 Estimating range for an answer
- 29 Reading maps drawn to scale
- 31 Dividing dollars by dollars
- 117 Solving word problems involving the multiplication of fractions and mixed numbers
- 153 Solving word problems involving division of mixed numbers
- 154 Estimating answers to division word problems

### Estimation

- 20 Estimating the answers for addition, subtraction and multiplication word problems using rounding to the nearest ten, hundred or thousand
- 20 Estimating range for an answer
- 42 Estimating the most reasonable answer
- 58 Estimating answers to problems involving numbers with up to nine digits
- 86 Estimating to the nearest dollar or whole number
- 140 Reviewing rounding quotients
- 154 Estimating answers to division word problems

### Money

- 31 Dividing dollars by dollars
- 72 Calculating cost per unit

# Scope and Sequence

by lesson number

- 86 Estimating to the nearest dollar or whole number
- 110 Solving word problems involving sales tax, sale price, interest and profit
- 151 Comparing the value of products using different currencies
- 152 Calculating cost per ounce

## **Fractions, Decimals and Percents**

- 40 Calculating answers to word problems using 2 to 1 and 5 to 1 ratios
- 67 Determining percent in a word problem
- 79 Solving word problems involving decimals
- 87 Comparing fractions in word problems
- 105 Solving word problems involving percent, including the word “not”
- 110 Solving word problems involving sales tax, sale price, interest and profit
- 117 Solving word problems involving multiplication of fractions and mixed numbers
- 127 Calculating percents in word problems
- 140 Calculating percents in word problems, rounding to the nearest whole percent
- 153 Solving word problems involving division of mixed numbers

## **Pre-Algebra and Statistics**

- 1 Selecting the correct equation
- 45 Using Venn diagrams to understand the union and intersection of sets
- 55 Calculating averages
- 65 Calculating mean, median and mode
- 89 Calculating distance, time, rate and speed in word problems
- 120 Calculating averages involving decimals and fractions

## **Reasoning**

- 7 Solving word problems using deductive reasoning
- 7 Determining if there is sufficient information to answer the question in a word problem
- 7 Determining what information is needed to answer a question
- 8 Solving word problems by listing possibilities or by making a chart
- 42 Determining the question given the information and the answer
- 69 Using trial and error and charting strategies to solve word problems
- 96 Solving word problems by working backwards

## **Geometry**

- 30 Solving word problems involving area and perimeter
- 108 Calculating volume in word problems

## **MEASUREMENTS**

- 10 Estimating measurements
- 10 Measuring temperature
- 10 Learning measurement equivalents for length, width and volume: feet, inches, yards, centimeters, meters, kilometers, grams, kilograms, liters, milliliters, millimeters, quarts, gallons, ounces, pounds and tons
- 10 Converting measurements using multiplication or division
- 10 Determining the measurement that is longer or shorter or heavier or lighter
- 11 Comparing U.S. and customary metric units
- 126 Converting measurements using multiplication or division with fractional or decimal remainders
- 137 Adding and multiplying measurements; simplifying units
- 141 Subtracting measurements by exchanging units

## **GEOMETRY**

### **One-Dimensional**

- 11 Measuring line segments to the nearest half inch, quarter inch and half centimeter
- 14 Learning the terminology of parallel, intersecting and perpendicular lines

### **Two-Dimensional**

- 14 Learning the terminology of plane figure, polygon, quadrilateral, parallelogram, rectangle, square, diagonal, rhombus and trapezoid
- 21 Learning the terminology of pentagon, hexagon and octagon
- 21 Determining figures that do or do not belong in a set
- 23 Recognizing similar and congruent figures
- 23 Recognizing flips, slides and turns
- 23 Recognizing lines of symmetry
- 23 Recognizing bilateral and rotational symmetry
- 25 Recognizing equilateral, isosceles and scalene triangles
- 30 Calculating the area and perimeter of a rectangle
- 30 Solving word problems involving area and perimeter
- 33 Recognizing the pattern in a sequence of figures or pattern of shading
- 33 Solving for an unknown angle in a triangle
- 60 Recognizing parts of a circle
- 60 Calculating diameter and radius

# Scope and Sequence

by lesson number

- 60 Associating the 360 degrees in a circle with one-quarter, one-half, three-quarter and full turns
- 75 Calculating the perimeter and area of an irregular figure
- 76 Calculating area and perimeter given coordinates on a coordinate grid
- 121 Calculating the area of a parallelogram
- 124 Calculating the area of a triangle
- 125 Calculating the circumference and area of a circle
- 125 Recognizing  $\pi$  (pi)
- 148 Solving for an unknown with similar polygons

## **Three-Dimensional**

- 15 Recognizing three-dimensional figures - sphere, cube, cone, cylinder, rectangular, square and triangular pyramids and rectangular and triangular prisms
- 15 Learning the terminology of flat and curved faces, bases, edges and vertices
- 59 Calculating the volume of a rectangular prism with one or more layers of cubes using the formula  $L \times W \times H$
- 100 Calculating the surface area of a rectangular prism
- 108 Calculating volume in word problems
- 139 Calculating the volume of a triangular prism or cylinder

## **Angles**

- 25 Learning the sum of the angles of a rectangle
- 25 Recognizing right, obtuse and acute angles
- 25 Measuring and estimating angles
- 25 Learning the sum of the angles of a triangle
- 80 Recognizing complementary, straight and supplementary angles
- 88 Recognizing adjacent, vertical, corresponding, exterior and interior angles
- 88 Defining angle bisector

## **ESTIMATION**

- 20 Rounding to the nearest ten, hundred or thousand
- 20 Estimating the answers for addition, subtraction and multiplication word problems using rounding to the nearest ten, hundred or thousand
- 20 Estimating range for an answer
- 20 Rounding numbers so there is only one non-zero digit
- 42 Estimating the most reasonable answer
- 49 Rounding money amounts and decimal numbers to the nearest dollar or whole number
- 58 Estimating answers to problems involving numbers with up to nine digits

- 61 Rounding decimal numbers to the nearest tenth or hundredth
- 86 Estimating to the nearest dollar or whole number
- 98 Selecting the most reasonable answer involving percents
- 108 Estimating using rounding to one-digit accuracy
- 123 Rounding mixed numbers
- 134 Using rounding to estimate quotients
- 140 Rounding quotients
- 154 Estimating answers to division word problems

## **PRE-ALGEBRA**

### **Algebraic Equations**

- 1 Selecting the correct equation
- 3 Using trial and error to solve for unknowns in an equation
- 3 Solving algebraic equations with and without parentheses
- 3 Learning the order of operations when solving an equation
- 3 Finding the value of an unknown by performing the same operation on both sides of an equation
- 40 Recognizing multiplication without the "x" symbol
- 48 Recognizing division without the "÷" symbol
- 57 Solving equations involving fractions
- 61 Solving equations involving decimals
- 91 Solving equations with embedded parentheses
- 100 Determining the equation that creates a pattern
- 114 Determining the equation that represents a problem and the equation that solves it
- 115 Identifying the equation that represents a line on a coordinate graph
- 115 Learning slope and intercept
- 148 Solving for an unknown with similar polygons

### **Numbers**

- 63 Comparing positive and negative numbers
- 77 Calculating using exponents
- 77 Calculating square roots
- 130 Adding positive and negative integers
- 131 Continued - Adding positive and negative integers
- 143 Subtracting positive and negative integers
- 144 Continued - Subtracting positive and negative integers
- 155 Multiplying and dividing positive and negative integers

### **Factoring**

- 64 Determining numbers that are multiples of one number and factors of another
- 150 Calculating using factorials and permutations

# Scope and Sequence

by lesson number

## **Patterns**

- 21 Recognizing patterns
- 100 Determining the equation that creates a pattern
- 149 Determining number patterns

## **Coordinate Graphs**

- 32 Determining coordinate points
- 36 Calculating the length of vertical and horizontal lines by subtracting x- and y-coordinates
- 68 Determining if coordinate points are on a given line
- 76 Calculating area and perimeter given coordinates on a coordinate grid
- 109 Determining negative numbers using coordinate points
- 115 Identifying the equation that represents a line on a coordinate graph
- 115 Learning slope and intercept
- 145 Determining the fourth vertex of a parallelogram on a coordinate graph

## **Number Statements**

- 2 Recognizing the symbols  $<$  less than and  $>$  greater than
- 2 Selecting the correct symbol for a number statement
- 3 Recognizing true and not true number statements
- 3 Changing a number statement from  $\neq$  to  $=$
- 74 Evaluating decimal numbers in true and not true number statements

## **Other**

- 38 Learning the Property of One and the Zero Property
- 45 Using Venn diagrams to understand the union and intersection of sets
- 66 Calculating equivalent ratios
- 128 Recognizing the symbol for a repeating decimal

## **PROBABILITY**

- 34 Determining the probability of an event
- 34 Comparing probabilities
- 70 Recognizing the difference between probability and statistics
- 97 Writing probability as a fraction, decimal, percent or proportion (ratio)
- 99 Writing probabilities as lowest-terms fractions
- 133 Calculating expected numbers based on probabilities
- 150 Calculating the probability of two separate events as a sum and two consecutive events as a product

## **GRAPHS**

- 2 Comparing two or more sets of data using bar or line graphs
- 2 Interpreting information given in a histogram
- 94 Solving problems using data displayed as percent pie graphs

## **STATISTICS**

- 55 Calculating averages
- 65 Calculating mean, median and mode
- 65 Using stem and leaf plots
- 70 Recognizing the difference between probability and statistics
- 70 Defining dependent and independent variable, central tendency, statistics and outliers
- 70 Recognizing factors that influence data collection
- 70 Creating a scatter plot
- 120 Calculating averages involving decimals and fractions

# Scope and Sequence

Of Activities, Stretches and Create a Problems

## COMPUTATION

### Activity

3, 4, 10, 12, 14

### Create a Problem

2, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 20, 22, 23, 24

## ESTIMATION

### Activity

4

### Create a Problem

20, 24

## GEOMETRY

### Activity

1, 2, 3, 4, 5, 6, 7, 8, 11, 12

### Create a Problem

3, 4, 19, 20, 21

## GRAPHS

### Activity

4, 9

### Create a Problem

5, 6, 12, 13

## SCALE

### Activity

6

### Create a Problem

14, 17

## MEASUREMENT

### Activity

4, 13, 14

### Create a Problem

8, 9, 10, 14, 17

## PERCENT

### Activity

4

### Create a Problem

10, 15, 16, 22, 23

## PRE-ALGEBRA

### Activity

4, 6, 14

### Stretch

5, 8, 22, 27, 46, 47, 48, 68, 73, 78, 81, 82, 83, 87, 96, 102, 110, 115, 124, 130, 141

### Create a Problem

2, 10, 19, 24

## REASONING USING CALENDARS

### Stretch

21, 60

## REASONING USING COMPUTATION

### Stretch

1, 3, 12, 18, 20, 23, 25, 29, 30, 35, 36, 37, 38, 42, 44, 49, 66, 72, 74, 75, 76, 90, 92, 93, 99, 101, 111, 127, 132, 138, 139, 143, 150, 152

## REASONING USING GEOMETRY

### Stretch

14, 28, 39, 53, 54, 55, 56, 59, 63, 77, 84, 89, 108, 116, 118, 129

## REASONING USING LOGIC

### Stretch

4, 7, 11, 95, 100, 105, 106, 107, 109, 112, 114, 119, 120, 121, 122, 131, 134, 136, 137, 144, 145, 147, 148

## REASONING USING PATTERNS

### Stretch

6, 9, 13, 15, 24, 26, 94, 104, 140, 151

# Scope and Sequence

Of Activities, Stretches and Create a Problems

## REASONING USING POSSIBILITIES

### ***Stretch***

---

2, 16, 17, 19, 31, 32, 34, 40, 41, 51, 57, 58, 61, 64, 67, 69, 79, 80, 85, 88, 97, 103, 123, 125, 126, 128, 135, 146, 149

## REASONING USING ROMAN NUMERALS

### ***Stretch***

---

62, 70, 86, 98, 113, 117, 133, 142, 155

## REASONING USING VENN DIAGRAMS

### ***Stretch***

---

33, 43, 52

### ***Create a Problem***

---

11

## STATISTICS

### ***Activity***

---

9, 10, 11

### ***Create a Problem***

---

12, 18