Mathematics 300 Lesson Objectives

Unit 1: WHOLE NUMBERS	
Assignment	**Objectives**
Patterns: Digits and Number Words	Review reading and writing numbers Review reading and writing number words Review number order
Place Value	Use zero as a placeholder Review place value for ones and tens
Single-Digit Addition	Practice addition facts
Single-Digit Subtraction	Practice subtraction facts
Addition Problems	Practice two-digit addition
Subtraction Problems	Practice two-digit subtraction
Numbers on a Number Line	Use mental math to add and subtract
Pattern for Expanded Notation	Write numbers in expanded notation form Practice number order
Adding Multi-digit Numbers	Add numbers in a column Add three-digit numbers
Subtracting 3-Digit Numbers	Subtract three-digit numbers
Measurement	Measure with a ruler and yardstick Identify units of measure
Operation Symbols	Identify operation symbols to solve number sentences
Adding with Carrying	Add two-digit numbers with carrying
Cardinal and Ordinal Numbers	Identify cardinal and ordinal numbers
Standard Measurement for Time	Tell time using a face clock
Calendar Time	Measure time on a calendar
Unit Concept Review 1	Review operation symbols Review addition and subtraction
Unit Concept Review 2	Review digits, measurement, and time
Practice: Addition and Subtraction	Review and practice subtraction with borrowing Review and practice addition with carrying

Mathematics 300 Lesson Objectives

Unit 2: NUMBER PATTERNS	
Assignment	**Objectives**
Family of Facts	Create addition and subtraction fact families
Adding Ones, Tens, and Hundreds	Add two and three-digit numbers with and without carrying
Subtracting Ones, Tens, and Hundreds	Subtract two and three-digit numbers without borrowing
Place Value and Number Words	Identify place value to the hundreds place
Addition with Carrying	Add three-digit numbers with carrying
Skip Counting and Number Words	Practice reading and writing number words Add numbers using mental math Practice skip counting
Skip Counting and Addition with Carrying	Find odd and even number patterns Practice addition with carrying
Fractions	Identify fractions from pictures Read and write fractions
Subtracting with Borrowing	Practice subtraction with borrowing
Shapes	Identify flat and solid shapes
Money	Count coins Find the total value of sets of coins
Review: Borrowing	Review and practice subtraction with borrowing
Addition: Checking Answers	Check addition problems
Subtraction: Checking Answers	Check subtraction problems
Review: Number Order and Place Value	Review expanded notation Review number order Review place value
Review: Addition and Subtraction Facts	Review and practice addition and subtraction facts

Mathematics 300 Lesson Objectives

Unit 3: WHOLE NUMBERS AND FRACTIONS	
Assignment	**Objectives**
Fact Families, Mental Math, and Addition	Create addition and subtraction fact families Practice addition
Column Addition	Add a column of three numbers, with and without carrying
Addition: With and Without Carrying	Practice addition with and without carrying
Measurements: Weight and Volume	Identify standard units of measure for weight Identify standard units of measure for height
Fact Family, Place Value, and Number Order	Review number order Review place value Review fact families
Checking Addition Problems	Review and practice checking addition
More Checking Addition Problems	Practice checking addition problems with and without carrying
Subtraction with Borrowing	Subtract with regrouping from the tens and hundreds place
Number Sentences and Symbols	Use math symbols to solve number sentences
Subtraction with Borrowing and Checking	Practice checking subtraction problems with and without borrowing
Fractions	Identify and write fractions
Fractions - Continued	Identify and write fractions In this lesson, we will consider the whole as a
Addition Practice	Practice addition with carrying
Time: AM and PM	Identify a.m. and p.m. when telling time
Review: Addition, Subtraction, and Money	Review checking addition and subtraction Review counting and writing money Review fact families
Review: Story Problems, Lines, Shapes, and Measurement	Review lines and shapes Review story problems Review units of measurement for time and distance

Mathematics 300 Lesson Objectives

Unit 4: PLACE VALUE	
Assignment	**Objectives**
Numbers to Thousands Place	Identify place value to the thousands place
Addition and Skip Counting	Review skip counting Practice addition with sums to the thousands place
Rounding and Estimation	Use rounding to estimate answers Practice rounding to the tens place
Subtraction with Borrowing	Practice subtraction with borrowing
Measurement	Identify standard units of measurement for weight, volume, time, and distance
Number Words and Place Value	Review place value to the thousands place Create fact families Practice writing number words
Number Patterns	Practice number order Identify number patterns
Addition and Subtraction: Horizontal Form	Add and subtract problems written horizontally
Adding and Subtracting Fractions	Add and subtract fractions with like denominators
Roman Numerals	Identify numbers using the Roman numeral system
Review: Subtraction with Borrowing	Practice subtraction with borrowing
Review: Fractions	Identify fractions Practice reading and writing fractions
Review: Word Problems and Money	Practice solving word problems Practice counting coins

Mathematics 300 Lesson Objectives

Unit 5: MEASUREMENT, SHAPES, AND REVIEW	
Assignment	**Objectives**
Operation Symbols and Number Sense	Use operation symbols to write number sentences Review place value and number sense
Multi-Digit Addition And Subtraction	Practice subtraction with borrowing Practice addition with carrying
Cardinal and Ordinal Numbers	Identify cardinal and ordinal numbers in whole numbers Identify cardinal and ordinal numbers in fractions
Number Patterns Using Place Value	Identify place value to the thousands place Identify number patterns
Measuring Temperature	Identify boiling point of liquid Identify freezing point of liquid Find information on a graph
Operation Symbols	Use operation signs to solve number sentences
Shapes and Symmetry	Identify lines of symmetry Identify plane and solid shapes
Rounding and Estimating	Use rounding to find estimates
Finding Perimeter	Find the perimeter of shapes
Multi-Digit Addition and Subtraction	Solve problems using mental math Add and subtract vertically and horizontally
Odd And Even Numbers	Identify odd and even numbers
Review: Checking Addition	Practice checking addition problems
Review: Checking Subtraction	Practice checking subtraction problems
Review: Roman Numerals and Fractions	Identify and convert Roman numerals
Review: Multiple Concepts	Measuring money and time Rounding and estimation Addition and subtraction facts Number patterns and number order Review the following concepts: Roman numerals
Review: Story Problems	Practice solving word problems

Mathematics 300 Lesson Objectives

Unit 6: MULTIPLICATION, ADDITION, AND SUBTRACTION	
Assignment	**Objectives**
Multi-Digit Addition	Practice multi-digit addition with and without carrying
Skip Counting and Multiplication	Multiply using skip counting
Review: Telling Time	Practice telling time
Review: Subtraction	Practice subtraction with and without borrowing
Perimeter and Area	Find the perimeter and area of shapes
Review: Fractions	Add and subtract fractions
Addition and Equivalent Fractions	Identify equivalent fractions using pictures Practice addition
Money Computation and Roman Numerals	Add and subtract amounts of money Review Roman numerals
Multiplication	Memorize multiplication facts for 1's, 2's, and 3's Use skip counting to multiply
Lines, Angles, and Temperature	Identify lines and angles Practice reading a thermometer Identify endpoints and line segments
Review: Addition and Subtraction	Review and practice addition and subtraction
Story Problems	Practice solving story problems
Multiple Concept Review	Even and odd numbers Place value Review the following concepts: Fractions Shapes Roman numerals
Review: Calendar	Review units of time on a calendar Find information on a calendar

Mathematics 300 Lesson Objectives

Unit 7: OPERATIONS, LIKELIHOOD, AND PROBABILITY	
Assignment	**Objectives**
Review: Place Value	Review place value of multi-digit numbers
Review: Subtraction with Borrowing	Review and practice subtraction with borrowing
Multiplication Facts (1)	Practice multiplication facts for 1's, 2's, 3's, 5's, and 6's
Measurement	Find perimeter and area Practice using standard units of measure
Practicing Subtraction with Borrowing	Practice subtraction, including regrouping with zeros
Mixed Numbers	Read and write mixed numbers Add and subtract mixed numbers Identify mixed numbers
Review: Expanded Notation and Roman Numerals	Review Roman numerals Write numbers in their expanded form
Probability and Likelihood	Predict probability and likelihood
Math Facts	Practice math facts Solve number sentences
Symmetry	Identify the line of symmetry in figures
Review: Money	Solve problems using money
Multiplication Facts (2)	Review and memorize multiplication facts for 2's and 5's Learn the multiplication facts for 7's and 8's
Multiple Concept Review	Fact families Review the following concepts: Lines and angles Fractions and multiplication Graphs Place value Story problems Measurement

Mathematics 300 Lesson Objectives

Unit 8: MEASUREMENT, FRACTIONS, AND DECIMALS	
Assignment	**Objectives**
Shapes, Measurement, and Addition	Practice checking addition and subtraction Convert and add measurements Identify flat and solid shapes
Time and Measurement	Review number order Solve problems using a calendar Practice mental math
Fractions, Odd and Even Number Patterns	Identify even and odd number patterns Review fraction words
Decimals	Read and write decimals
Money Problems	Solve story problems using money Review and practice estimation and rounding
Fractions, Place Value, and Measurement	Write numbers in expanded form Measure to the 1/4 inch using a ruler Add mixed numbers Practice place value
Directions	Identify north, south, east, and west on a grid Locate points using directions on a grid
Multiplication Facts	Practice memorizing multiplication facts for 3's and 4's Practice memorizing multiplication facts for 8's and 9's
Multiple Concept Practice	Review fractions Review number relation symbols Review Roman numerals Review multiplication facts
Review: Addition With Checking	Practice addition with checking
Word Problems	Solve word problems
Using Graphs	Find data using bar and line graphs Practice finding perimeter and area Find data using circle and picture graphs

Mathematics 300 Lesson Objectives

Unit 9: REVIEW: MULTIPLE CONCEPTS	
Assignment	**Objectives**
How Numbers Work	Write numbers in expanded form Identify number patterns Use number symbols to solve number sentences
Math Facts	Practice basic math facts
Add/Subtract with Checking	Check your own subtraction work Check your own addition work
Multiplication	Memorize multiplication facts for 1's, 2's, 3's, 4's, and 5's
Equivalent Fractions	Identify equivalent fractions
Reading and Writing Fractions	Read and write fractions
Fraction Computation	Add and subtract fractions and mixed numbers
Measure: Length, Perimeter, and Area	Find the area of a shape Find the perimeter of a shape Identify customary units of length
Measure: Money, Time, and Temperature	Identify and count coins Read temperatures on a thermometer Tell time using a face and digital clock
Measure: Weight and Volume	Identify standard units of volume Identify standard units of weight
Symmetry and Shapes	Place a line of symmetry on pictures Identify lines, and plane and solid shapes
Roman Numerals	Convert Arabic and Roman numerals Identify Roman numerals
Likelihood and Graphing	Determine if events are likely, or probable Graph information on bar, line, picture, and circle graphs
Problem Solving	Solve problems written in words

Mathematics 300 Lesson Objectives

Unit 10: BASIC MATH REVIEW	
Assignment	**Objectives**
Review: Rounding and Estimation	Review rounding to the tens, hundreds, and thousands place Use rounding to estimate answers
Review: Adding Fractions	Practice adding fractions
Review: Subtracting Fractions	Practice subtracting fractions
Review: Multiplication Facts	Practice multiplication facts from memory
Review: Mental Math, Graphs, Likelihood	Solving number sentences using mental math Determine likelihood and probability Identify information on a circle graph
Review: Addition and Subtraction Computation	Identify the parts of addition and subtraction problems Practice adding and subtracting
Review: Fractions and Decimals	Identify equivalent fractions from pictures Identify fractions and decimals
Review: Add and Subtract Mixed Numbers and Fractions	Add and subtract fractions Add and subtract mixed numbers
Review: Finding Missing Numbers	Solve problems with missing number symbols Solve problems with missing numbers
Review: Shapes and Symmetry	Identify plane and solid shapes Identify a line of symmetry
Review: Roman Numerals	Convert Arabic and Roman numerals
Review: Measurement	Time Weight Length Volume Dozens
Review: Number Symbols and Grouping	Solve equations using parentheses to group numbers Solve equations using operation and number relation words
Review: Perimeter and Area	Find the perimeter of figures Find the area of figures
Review: Problem Solving	Number patterns Calendar skills Directions Money Addition, subtraction, and multiplication Fractions Cardinal and ordinal numbers Solve problems on the following concepts: Measurement

Mathematics 400 Lesson Objectives

Unit 1: NUMBER SENSE AND PLACE VALUE	
Assignment	**Objectives**
Place Value to 1,000s	Review digits Review place value
Single-Digit Addition	Practice addition facts Review single-digit addition
Single-Digit Subtraction	Practice subtraction facts Review subtraction
Multi-Digit Addition	Review multi-digit addition with regrouping
Multi-Digit Subtraction	Review multi-digit subtraction with regrouping
Review Place Value to 1,000s	Review place value to the thousands place Write numbers in expanded notation
Multiplication Facts	Practice multiplication facts Review the multiplication process
Family of Facts	Create addition and subtraction fact families
Telling Time	Review telling time on a face clock
Number Words	Practice writing numbers Practice using place value
Patterns	Recognize number patterns
Cardinal and Ordinal Numbers	Identify cardinal and ordinal numbers Use mental math to add and subtract
Reading and Writing Fractions	Practice reading and writing fractions Define numerator and denominator
Practice Multiplication	Practice multiplication facts for 8's and 9's
Counting Money	Practice counting U.S. money Practice writing amounts of U.S. money
Operations	Practice solving equations Review operation signs
Review: Numbers	Review cardinal and ordinal numbers Review expanded notation
Story Problems	Learn three problem solving strategies Practice solving story problems

Mathematics 400 Lesson Objectives

Unit 2: ROUNDING AND ESTIMATION	
Assignment	**Objectives**
Operations	Practice using operation symbols Practice addition, subtraction, and multiplication operations
Multiplication Facts: 6-10 and Review	Multiply multi-digit numbers by a one digit multiplier Practice multiplication facts
Using Standard Measures	Identify standard measures of time, money, volume, and distance
Place Value to 10,000s	Identify place value to the 10,000's place
Relation Symbols	Use relation symbols to compare the values of numbers
Missing Number Equations	Solve missing numbers equations
Review: Even and Odd Numbers	Review even and odd numbers and number patterns
Adding and Subtracting Fractions	Identify the parts of a fraction Add and subtract fractions with like denominators
Rounding Numbers to 10s	Round numbers to the nearest 10
Estimating Answers to 10s	Use rounding to estimate to the nearest 10
Review: Math Symbols	Review units of measurement Review mathematical symbols Review writing number words
Equivalent Fractions	Find equivalent fractions
Rounding Numbers to 100s	Round numbers to the nearest hundred
Estimating Answers to 100s	Use rounding to estimate to the nearest hundred
Review: Computation	Solve addition, subtraction, and multiplication problems
Review: Bar Graphs and Fractions	Construct a bar graph Solve fraction problems using pictures
Review: Fractions	Practice adding and subtracting fractions with like denominators

Mathematics 400 Lesson Objectives

Unit 3: WHOLE NUMBERS AND FRACTIONS	
Assignment	**Objectives**
Place Value	Read and write numbers to the ten thousands place
Rounding Numbers to 10s, 100s, and 1,000s	Round numbers to the nearest ten, hundred, and thousands' place
Multiply with Carrying to 10s	Solve multiplication problems that require carrying
Multiplication Practice	Practice solving multiplication problems with and without carrying
Multi-Digit Addition and Subtraction	Practice regrouping in addition and subtraction
Rounding and Estimating	Solve addition and subtraction problems using rounding and estimation
Fractions Equal to Whole Numbers	Identify fractions with a value of one or more than one
Estimate Answers to 1,000s	Estimate sums and differences to the thousand's place
Relation Symbols	Compare the value of numbers using relation symbols
Fractions	Add and subtract fractions with like denominators
Add and Subtract to 10,000s	Add and subtract using regrouping to the ten thousand's place
Check Your Answers	Practice checking your own work when adding and subtracting
Equivalent Fractions	Use cross-multiplication to check for equivalent fractions Make equivalent fractions
Learn Numbers to 100,000s	Read and write numbers to the hundred thousand's place
Equations	Solve equations that contain a variable
Reading and Solving Story Problems	Solve story problems using clues found in the problem
Line Graphs	Interpret and create a line graph

Mathematics 400 Lesson Objectives

Unit 4: LINES AND SHAPES	
Assignment	**Objectives**
Plane and Solid Shapes	Identify plane and solid shapes
Practice Addition and Subtraction	Regroup numbers that have a zero in the minuend Practice addition and subtraction with regrouping
Place Value and Rounding	Review rounding and place value to the ten thousands' place
Multiply with Carrying to 100s	Practice multiplying with regrouping Learn the properties of multiplication
Lines, Segments, End Points, Rays, Angles	Identify lines and line segments Identify end points, rays, and angles
Lines, Directions, and Maps	Measure distances on a map Identify directions using a compass rose
Review: Plane and Solid Shapes	Review and identify plane and solid shapes
Fractions	Identify equivalent, proper, and improper fractions
Missing Number Problems	Solve missing number equations
Review: Operation and Relation Symbols	Solve equations using the proper operation and relation symbols
Review: Expanded Notation and Estimation	Write numbers in expanded notation Estimate sums and differences using rounding
Review: Fractions and Place Value	Review fractions and place value

Mathematics 400 Lesson Objectives

Unit 5: DIVISION AND MEASUREMENT	
Assignment	**Objectives**
Introduction to Division	Make fact families using division facts Divide sets into equal groups
Multiplication	Multiply by one-digit multipliers
Addition and Subtraction	Practice addition and subtraction
Review: Time and Number Sense	Review telling time Review relation signs Review place value and writing numbers
Linear Measurement	Identify standard linear units of measurement
Capacity (Dry and Liquid Measurement)	Identify standard units of measurement for dry and liquid capacity
Division Facts	Practice memorizing division facts
Review: Multiplication	Multiply to the ten thousands' place
Reading a Calendar	Find information on a calendar
Perimeter and Area	Learn and use the formula for finding perimeter and area
Finding Perimeter and Area	Practice finding perimeter and area
Missing Number Problems	Practice solving equations with missing numbers
Division Practice	Practice solving division problems
Roman Numerals	Convert Arabic numbers to Roman numerals
Review: Regrouping	Practice regrouping in addition, subtraction, and multiplication
Patterns	Identify number patterns

Mathematics 400 Lesson Objectives

Unit 6: MULTIPLICATION AND FRACTIONS	
Assignment	**Objectives**
Prime and Composite Numbers	Identify prime and composite numbers
Multiples	Identify multiples and factors
Division with Remainders	Solve division problems with remainders
Equations and Grouping	Review missing number problems Use grouping to solve missing number problems
Proper and Improper Fractions	Identify proper and improper fractions using a number line
Multiplication Facts For 11 and 12	Practice multiplication facts for 11's and 12's
Fractions and Mixed Numbers	Read and write mixed numbers Add and subtract mixed numbers
Review: Division and Roman Numerals	Practice using Roman numerals Practice solving division with remainder problems
Measurements	Identify standard units of measure for weight Identify standard units of measure for length Identify standard units of measure for capacity
Equivalent Fractions	Review lines and line segments Identify equivalent fractions
Review: Rounding and Shapes	Review plane shapes Round numbers to the nearest ten, hundred, and thousand
Factors and Multiples	Identify factors and multiples
Problem Solving with Equations	Solve story problems using missing number equations

Mathematics 400 Lesson Objectives

Unit 7: FRACTIONS AND PATTERNS	
Assignment	**Objectives**
Multiplication and Division	Multiply with two-digit multipliers Review division with remainders
Factors, Multiples, and Variables	Review relation signs Review variables Review prime and composite numbers Review factors and multiples
Fractions	Identify proper and improper fractions using graphics
Multiplication and Fractions	Simplify fractions Solve two-digit multiplication problems
Average and Number Rules	Determine the average of a set of numbers
Review: Measurement and Place Value	Review standard units of measure for length, weight, and volume
Fractions	Add, subtract, and simplify fractions
Missing Number Problems	Solve equations containing parentheses
Rounding Numbers and Place Value	Round numbers to the nearest ten, hundred, and thousand
Review: Shapes, Perimeter, and Area	Review lines and angles Find the perimeter and area of shapes Review plane and solid shapes
Fractions and Patterns	Convert mixed numbers to improper fractions Find number patterns
Practice: Operations and Money	Add and subtract amounts of money Use decimal points and dollar signs properly
Review: Cardinal and Ordinal Numbers	Practice using cardinal and ordinal numbers

Mathematics 400 Lesson Objectives

Unit 8: DIVISION AND FRACTIONS	
Assignment	**Objectives**
Factoring and Place Value	Identify prime and composite numbers Identify factors and multiples
Review: Two-Digit Multiplication	Multiply two and three-digit numbers by a two-digit multiplier
Fractions	Identify mixed numbers, proper and improper fractions Add, subtract, and simplify fractions
Division	Review and practice division with remainders
Fractions	Identify smallest common multiples Find equivalent fractions Add and subtract fractions with unlike denominators
Missing Number Problems	Use missing number equations to solve problems
Multiplication	Multiply by one-digit and two-digit multipliers
Division	Solve multi-digit division problems with and without remainders
The Metric System	Identify metric units of measurement
Fractions	Identify common denominators of fractions Add and subtract fractions with unlike denominators Find equivalent fractions
Review: Time	Tell time on a face clock and a digital clock
Review: Operations and Rounding	Review and practice computation Review and practice rounding
Review: Roman Numerals, Measurement, and Symbols	Solve equations through the use of relation symbols Identify standard units of measure Practice using Roman numerals

Mathematics 400 Lesson Objectives

Unit 9: DECIMALS AND FRACTIONS	
Assignment	**Objectives**
Decimals	Calculate with decimal numbers Read and write decimal numbers
Money	Practice adding and subtracting amounts of money
Multiplication of Whole Numbers	Practice multiplying by two-digit multipliers
Ordered Pairs	Use ordered pairs to find locations on a grid
Division and Averages	Review and practice finding averages Review and practice division by one-digit divisors
Add and Subtract Decimals	Add and subtract decimals
Fractions with Different Denominators	Find equivalent fractions Add and subtract fractions with unlike denominators
Equivalent Fractions and Decimals	Cross-multiply to find equivalent fractions Review place value of decimals
Multiply and Divide	Practice multiplication and division
Mixed Numbers	Add and subtract mixed numbers
Sensible Answers	Use rounding and estimation to decide if an answer is sensible
Review: Fractions	Review addition and subtraction of fractions Review mixed numbers Review proper and improper fractions Review finding equivalent fractions
Review	Review metric units of measurement Review perimeter and area Practice solving equations Review Roman numerals

Mathematics 400 Lesson Objectives

Unit 10: GRAPHING AND REVIEW	
Assignment	**Objectives**
Data Collection and Random Sampling	Define prediction Define random sampling
Project: Collecting Data	Take a random sample Collect and report data
Project: Predicting Data	Make predictions from data of a random sample Report data from a random sample
Graphs	Graph data on circle and picture graphs Graph data on line and bar graphs
Whole Numbers	Practice the four basic operations: addition, subtraction, multiplication, and division Check multiplication and division problems
Decimal Numbers	Review reading and writing decimal numbers Review computation with decimals
Problem Solving with Fractions	Solve story problems using fractions
Fractions	Identify proper and improper fractions Add and subtract fractions Simplify fractions Find common denominators
Sizes, Shapes, and Measurements	Identify plane and solid shapes
Word Problems and Equations	Practice solving word problems Practice solving equations

Mathematics 500 Lesson Objectives

Unit 1: PLACE VALUE, ADDITION, AND SUBTRACTION	
Assignment	**Objectives**
Whole Number Place Value	Identify place value. Read and write numbers in different forms.
Comparing and Ordering Whole Numbers	Ordering Numbers. Comparing numbers.
Decimal Number Place Value	Read and write decimal numbers in different forms. Represent decimal numbers on a grid. Identify place value for decimal numbers.
Comparing and Ordering Decimal Numbers	Review: representing decimal numbers. Compare and order decimal numbers.
Rounding Whole Numbers and Decimals	Round whole numbers and decimals.
Estimating Sums and Differences	Estimate sums and differences.
Add and Subtract Mentally	Add and subtract numbers mentally. Know the Commutative, Associative, and Identity Properties of Addition.
Adding and Subtracting Whole Numbers	Add whole numbers. Subtract whole numbers.
Adding Decimal Numbers	Add decimal numbers.
Subtracting Decimal Numbers	Subtract decimal numbers. Review: Add decimal numbers.
Project: Logical Reasoning	Solve logic puzzles using a diagram or table. Write your own logic puzzle and solution.
Review	Review adding and subtracting whole numbers and decimals. Review comparing and ordering whole numbers and decimals. Review rounding and estimating with whole numbers and decimals. Review place value for whole numbers and decimals. Review the whole number properties.

Mathematics 500 Lesson Objectives

Unit 2: MULTIPLYING WHOLE NUMBERS AND DECIMALS	
Assignment	**Objectives**
Estimating Whole Number Products	Review: Basic Math Facts. Estimate the product of two numbers.
Properties of Multiplication	Know the Commutative, Associative, and Identity Properties of Multiplication. Use the Distributive Property to multiply numbers mentally. Know the Zero Property of Multiplication.
Multiplying Whole Numbers	Multiply whole numbers using a pencil and paper.
Exponents	Find the value of a base and exponent in standard form. Use exponents to show repeated multiplication.
Multiplying Whole Numbers by Powers of Ten	Represent 10, 100, and 1,000 using exponents. Multiply a whole number by a power of ten.
Project: How Much is a Million	Solve problems about the number one million.
Multiplying Decimals by Powers of Ten	Review: Multiply whole numbers by 10, 100, 1000. Multiply decimal numbers by 10, 100, or 1,000.
Estimating Decimal Products	Estimating decimal number products by using powers of ten. Estimate decimal number products.
Multiplying Whole Numbers by Decimals	Multiply a whole number by a decimal number using a grid. Multiply a whole number by a decimal number using pencil and paper.
Multiplying Decimals by Decimals	Multiply a decimal number by a decimal number using a grid. Multiply a decimal number by a decimal number using pencil and paper.
Solving Multiplication Problems	Solve word problems using multiplication.
Review	Review the properties of multiplication. Review solving multiplication word problems. Review multiplying whole numbers and decimal numbers. Review estimating whole number and decimal products. Review multiplying whole numbers and decimals by powers of ten.

Mathematics 500 Lesson Objectives

Unit 3: DIVIDING WHOLE NUMBERS AND DECIMALS	
Assignment	**Objectives**
Understanding Division	Division as Repeated Subtraction. Division as the Opposite of Multiplication. Understanding Division as Regrouping.
Estimating Quotients	Divide large numbers that end in zero(s). Estimate quotients using compatible numbers.
Dividing Whole Numbers	Steps of Long Division. Use long division to find a quotient. Review: Estimate a Quotient Using Compatible Numbers.
Remainders	Check division problems that have remainders Review: Steps of Long Division. Solve division problems that have remainders.
Dividing by Multiples of Ten	Divide by multiples of ten. Review: Divide numbers that end in zero.
Dividing Whole Numbers I	Divide with two-digit divisors.
Dividing Whole Numbers II	Divide with two-digit divisors.
Interpreting the Remainder	Use context to interpret the remainder in a real life problem. Use division to solve real life problems.
Dividing by Powers of Ten	Divide decimals by 10, 100, and 1,000. Divide whole numbers by 10, 100, and 1,000.
Dividing Decimals by Whole Numbers	Divide decimal numbers using long division. Divide decimal numbers using a grid.
Dividing with Money	Solve money problems using division. Review: Steps for solving real-life problems.
Review	Review modeling division problems. Review solving real life problems. Review dividing whole numbers and decimals by powers of ten. Review solving division problems that have remainders. Review estimating quotients. Review solving division problems using long division.

Mathematics 500 Lesson Objectives

Unit 4: ALGEBRA AND GRAPHING	
Assignment	**Objectives**
Addition and Subtraction Expressions	Write and evaluate addition or subtraction expressions.
Multiplication Expressions	Write and evaluate multiplication expressions for a specific value, using substitution.
The Order of Operations	Evaluate numerical expressions using order of operations. Rules for the order of operations.
Addition and Subtraction Equations	Identify and solve addition or subtraction equations for real life situations. Identify and solve addition or subtraction equations, using mental math.
Multiplication Equations	Identify and solve multiplication equations, using mental math. Use multiplication equations to solve real-life problems.
Functions	Find the output of a function, using function rule.
Project: Patterns	Generate patterns. Determine the next figure or term in a sequence.
The Coordinate Plane	Graph ordered pairs in Quadrant I of the coordinate plane
Graphing Functions	Graph functions in Quadrant I of the coordinate plane
Interpreting Graphs	Use Graph of functions to predict future events. Graph functions in Quadrant I of the coordinate plane.
Integers	Understand Integers in Everyday Life. Represent integers on the number line.
Review	Review representing integers on the number line. Review finding the output of functions. Review evaluating expressions and solving equations with one variable. Review graphing ordered pairs and functions.

Mathematics 500 Lesson Objectives

Unit 5: MEASUREMENT	
Assignment	**Objectives**
The Metric System	Compare metric units. Name metric units.
Length	Compare units of length within the metric system within the metric system. Convert units of length within the metric system.
Mass	Convert units of mass within the metric system. Compare units of mass within the metric system.
Capacity	Convert units of capacity within the metric system. Compare units of capacity within the metric system.
Length	Convert units of length within the customary system. Compare units of length within the customary system.
Weight	Compare units of weight within the customary system. Convert units of weight within the customary system.
Capacity	Compare units of capacity within the customary system. Convert units of capacity within the customary system.
Project: Density	Convert from kilograms to pounds. Determine the next density of materials per 1,000 cubic centimeters.
Time	Compare units used to measure time. Convert units of time.
Elapsed Time	Calculate elapsed time. Calculate elapsed time between A.M. and P.M.
Temperature	Convert measurements of temperature. Compare measurements of temperature.
Review	Review comparing and converting units of time and finding elapsed time. Review comparing and converting units of temperature. Review comparing and converting metric units. Review comparing and converting customary system units.

Mathematics 500 Lesson Objectives

Unit 6: FACTORS AND FRACTIONS	
Assignment	**Objectives**
Factors	Find all the factors of a number. Determine if a number is prime or composite.
Prime Factorization	Find the prime factorization of a number.
Greatest Common Factor	Find the prime factorization of a number.
Fractions	Use a number line to represent fractions. Use fraction numbers to represent parts of a whole.
Improper Fractions and Mixed Numbers	Convert between improper fractions and mixed numbers.
Simplifying Fractions	Write fractions in simplest form.
Equivalent Fractions	Find equivalent fractions.
Equivalent Fractions	Determine if two fractions are equivalent. Find a missing value in a pair of equivalent fractions.
Least Common Multiple	List multiples of a number. Find the LCM of two numbers.
Comparing Fractions	Compare fractions and mixed numbers using the least common denominator. Order fractions and mixed numbers from smallest to largest.
Fractions and Decimals	Convert between fractions and decimals.
Rounding Fractions	Compare fractions to one half. Round mixed numbers to the nearest whole number.
Review	Review converting between fractions and decimals. Review fractions, improper fractions, and mixed numbers. Review prime factoring of composite numbers, GCF, and LCM, and simplifying fractions. Review rounding fractions and mixed numbers. Review writing equivalent fractions, and ordering and comparing fractions using LCD.

Mathematics 500 Lesson Objectives

Unit 7: FRACTION OPERATIONS	
Assignment	**Objectives**
Adding and Subtracting Fractions	Add fractions that have like denominators. Subtract fractions that have like denominators.
Adding and Subtracting Mixed Numbers	Subtract mixed numbers with like denominators Add mixed numbers with like denominators.
Estimating Sums and Differences	Estimate differences of fractions and mixed numbers. Estimate sums of fractions and mixed numbers.
Adding Fractions	Add fractions with unlike denominators using pencil and paper. Add fractions with unlike denominators using fraction bars.
Subtracting Fractions	Subtract fractions with unlike denominators.
Adding Mixed Numbers	Add mixed numbers with unlike denominators.
Subtracting Mixed Numbers	Subtract mixed numbers with unlike denominators.
Multiplying Whole Numbers and Fractions	Multiply a fraction by a whole number.
Multiplying Fractions	Multiple proper fractions together using paper and pencil. Multiply proper fractions together using models.
Multiplying Mixed Numbers	Multiply with fractions and mixed numbers. Multiply with fractions and whole numbers.
Dividing Fractions	Divide unit fractions by whole numbers. Divide whole numbers by unit fractions.
Review	Review dividing with unit fractions and whole numbers. Review adding and subtracting fractions and mixed numbers with like denominators. Review estimating, adding and subtracting fractions and mixed numbers with unlike denominators. Review multiplying with fractions and mixed numbers.

Mathematics 500 Lesson Objectives

Unit 8: DATA ANALYSIS AND PROBABILITY	
Assignment	**Objectives**
Collecting Data and Frequency Tables	Organize data using a frequency table. Collect data.
Measures of Central Tendency	Find the mean, median, mode, and range of a set of data.
Line Plots	Construct a line plot. Organize data using a line plot.
Stem-and-Leaf Plots	Organize data using a stem-and-leaf plot. Construct a stem-and-leaf plot.
Bar Graphs	Display data in a bar graph. Display data in a double bar graph.
Line Graphs	Display data in a line graph. Construct and interpret a line graph.
Choosing the Right Graph	Choose the right graph to represent data. Use a pictograph to represent data.
Probability	Determine how likely an event may happen: less likely, equally likely, or more likely. Determine probability in experiments.
Probability as a Fraction	Predict the probability of events. Represent the probability of an event as a fraction.
Listing Outcomes	List the outcomes of one or two events using a tree diagram. List the outcomes to find probability for other independent events.
Making Predictions	Make predictions about an event using theoretical probability. Make predictions about an event using experimental probability. Make predictions about compound events.
Review	Use probability to determine the likelihood of events Analyze data using the mean, median, mode, and range. Choose the best way to display data, including a: frequency table, line plot, stem-and-leaf plot, bar graph, line graph, and pictograph

Mathematics 500 Lesson Objectives

Unit 9: GEOMETRY	
Assignment	**Objectives**
Geometry Terms	Use definitions and correct notation to name. Use correct geometry terminology.
Angles	Estimate the measure of angles. Measure angles using a protractor. Describe angles using degrees. Classify angles as right, acute, or obtuse.
Circles	Identify parts of a circle.
Polygons	Determine if a polygon is regular or not. Name polygons.
Triangles	Classify triangles by their sides. Classifify triangles by their angles. Classify trianges by both sides and angles.
Quadrilaterals	Classify quadrilaterals by their angles. Group quadrilaterals by overlapping characteristics. Classify quadrilaterals by their sides.
Solid Figures	Classify cylinders, cones, and spheres; identify their nets. Classify pyramids and identify their nets. Classify prisms and identify their nets.
Similar and Congruent Figures	Determine whether figures are similar or congruent. Define properties of similar figures. Solve for unknown measures in similar figures. Identify corresponding parts of congruent and similar figures.
Transformations	Identify transformations: rotations. Identify transformations: reflections. Identify transformations: translations.
Symmetry	Draw the other half of symmetrical figures. Identify line symmetry. Identify point symmetry.
Project: Constructions	Construct an equilateral triangle using a compass and straight edge. Create a design using rotational and line symmetry. Construct a regular hexagon using a compass and straight edge. Construct a square using a compass and straight edge.
Review	Name and classify types of polygons. Name and classify solid figures; identify nets. Use geometry terms; identify parts of circles; measure and classify angles. Identify: similar and congruent figures, transformations, and symmetry.

Mathematics 500 Lesson Objectives

Unit 10: PERIMETER, AREA, AND VOLUME	
Assignment	**Objectives**
Polygons	Find the perimeter of polygons.
Regular Polygons	Find the perimeter of regular polygons. Find the perimeter of rectangles.
Circumference	Find the approximate circumference of a circle, given the diameter.
Area	Use partial squares to find the area of plane figures. Find the area of plane figures.
Squares and Rectangles	Find the unknown dimension of rectangles. Find the area of rectangles.
Parallelograms	Find the area of parallelograms. Find the unknown dimension of parallelograms.
Triangles	Find the area of composite figures. Find the area of triangles.
Surface Area	Find the surface area of rectangular prisms.
Volume	Find the volume of rectangular prisms.
Solving Volume Problems	Solve Real Life Problems Using Volume. Review: Finding the volume of rectangular prisms.
Project: Solid Figures	Find surface area and volume of rectangular prisms. Draw 2-d views of these figures. Construct solid figures using blocks or sugar cubes.
Review	Find the approximate circumference of a circle, given the diameter. Find the perimeter of polygons, including regular polygons and rectangles. Find the area of plane figures, including rectangles, parallelograms, triangles, and composite figures. Find the surface area and volume of rectangular prisms.

Mathematics 500 Lesson Objectives

Unit 11: COURSE REVIEW AND EXAM	
Assignment	**Objectives**
Course Review 1	Review measurement in the metric system. Review temperature. Review measurement in the customary system. Review whole numbers and decimals. Review Multiplying and Estimating with Whole Numbers and Decimals. Review Algebra and Graphing: expressions, equations, and functions. Review Adding, Subtracting, and Estimating with Whole Numbers and Decimals. Review Dividing with Whole Numbers, Decimals, and Powers of Ten.
Course Review 2	Review adding and subtracting with fractions and mixed numbers. Review finding surface area, and volume. Review multiplying fractions and mixed numbers. Review polygons. Review solid figures and transformations. Review data analysis and probability. Review prime factors and fractions. Review finding perimeter and circumference.

Mathematics 600 Lesson Objectives

Unit 1: WHOLE NUMBERS AND ALGEBRA	
Assignment	**Objectives**
Rounding and Estimation	Round and estimate with whole numbers. Identify the place value of a digit in a whole number.
Whole Number Operations	Solve word problems involving whole numbers. Add, subtract, multiply, and divide with whole numbers.
Real Number Properties	Use the commutative, associative, identity, and distributive properties t Identify the commutative, associative, identity, and distributive propert
Exponents	Read an exponent. Use exponents to show repeated multiplication. Find the value of a power.
Squares, Cubes, and Roots	Find the square root of a perfect square. Find the cube root of a perfect cube. Identify perfect squares and perfect cubes.
Order of Operations	Use the order of operations to solve problems.
Number Patterns	Find the next term in a number pattern. Describe a number pattern.
Variables	Represent a word problem using a mathematical expression. Translate between written and mathematical expressions.
Expressions	Substitute numbers for variables in an expression. Evaluate expressions for specific numbers.
Variable Expressions	Simplify expressions using addition or multiplication. Simplify expressions using the distributive property.
Equations and Mental Math	Determine the question that an equation asks. Solve one-step equations using mental math.
Review	Review the order of operations. Review rounding, estimating, and computing with whole numbers. Review translating and evaluating expressions. Review the commutative, associative, identity, and distributive propert Review number patterns and sequences. Review exponents and roots. Review solving equations. Review simplifying expressions.

Mathematics 600 Lesson Objectives

Unit 2: DATA ANALYSIS	
Assignment	**Objectives**
Collecting Data and the Mean	Describe a set of data using the mean. Determine whether a sample is biased or random.
Median, Mode, and Range	Find the median, mode, and range for a set of data.
Describing Data	Determine how an outlier affects the measures of central tendency. Describe a set of data using the median, mode, and range of a set of Determine when each measure of central tendency provides a good
Frequency Tables	Organize and display data in frequency tables. Interpret data displayed in a frequency table.
Histograms	Organize and display data using histograms. Interpret data displayed in a histogram.
Line Plots	Interpret data displayed in line plots. Organize and display data using line plots.
Stem-and-Leaf Plots	Interpret data displayed in a stem-and-leaf plot. Organize and display data using stem-and-leaf plots.
Bar Graphs	Understand similarities between bar graphs and histograms Interpret data displayed in a bar graph. Organize and display data using bar graph.
Line Graphs	Organize and display data using line graphs. Interpret data displayed in a line graph.
Venn Diagrams	Use Venn diagrams to solve problems. Solve counting problems with Venn diagrams.
Vertex-Edge Graphs	Solve route problems with vertex-edge graphs.
Review	Review the measures of central tendency. Review using Venn diagrams to solve problems, including counting pro Review solving route problems with vertex-edge graphs. Review organizing and display data in frequency tables, histograms, l Review whether a sample is biased or random.

Mathematics 600 Lesson Objectives

Unit 3: DECIMALS	
Assignment	**Objectives**
Decimals and Place Value	Identify place value for decimal numbers. Read and write decimal numbers.
Ordering and Comparing	Compare and order decimal numbers.
Rounding and Estimating	Round decimal numbers using place value. Estimate with decimal numbers using different types of estimation.
Adding and Subtracting	Add and subtract decimal numbers.
Multiplying by Whole Numbers	Multiply decimal numbers by whole numbers.
Multiplying by Decimals	Multiply decimal numbers together.
Dividing by Whole Numbers	Divide decimal numbers by whole numbers.
Dividing by Decimals	Divide whole numbers by decimals. Divide decimals by decimals.
Length	Identify the different metric measurements for length. Estimate and measure with metric length. Explore the history of the metric system.
Mass and Capacity	Identify the units of mass and capacity in the metric system. Estimate with metric units of mass and capacity.
Multiplying and Dividing by Powers of Ten	Multiply and divide decimal numbers by powers of ten.
Converting Metric Units	Review metric units and multiplying and dividing by powers of ten. Convert units of measurement in the metric system.
Review	Review ordering, comparing, rounding, and estimating with decimal n Review adding and subtracting decimal numbers. Review the metric system and converting metric units. Review multiplying and dividing decimal numbers by powers of ten. Review reading and writing decimal numbers. Review multiplying and dividing by decimal numbers. Review place value of decimal numbers.

Mathematics 600 Lesson Objectives

Unit 4: FRACTIONS	
Assignment	**Objectives**
Divisibility and Prime Factorization	Determine whether a number is prime or composite. Express a number as a product of prime numbers. Use divisibility rules to find the prime factorization of a number.
Greatest Common Factor	Use divisibility rules to find factors of a number. Find the GCF of two numbers. List all the factors of a number.
Fractions	Use a fraction to show part of a whole. Represent a fraction on the number line.
Equivalent Fractions	Identify and find equivalent fractions. Reduce fractions to lowest terms.
Least Common Multiple	Find the least common multiple of two numbers.
Comparing and Ordering Fractions	Compare and order fractions. Find the least common denominator.
Improper Fractions and Mixed Numbers	Locate mixed numbers on the number line. Compare mixed numbers and improper fractions. Convert between improper fractions and mixed numbers.
Changing Decimals to Fractions	Convert decimals to fractions.
Changing Fractions to Decimals	Identify terminating and repeating decimal numbers. Convert fractions and mixed numbers to decimal numbers.
Estimating with Fractions	Round fractions to the nearest whole or half. Estimate with fractions using the four operations.
Measures of Time	Add and subtract measurements of time. Find elapsed time.
Review	Review rounding and estimating with fractions. Review proper fractions, improper fractions, and mixed numbers. Review the divisibility rules and finding the prime factorization of a num Review converting between decimal numbers and fractions. Review factors, the greatest common factor (GCF), and reducing frac Review multiples, the least common multiple (LCM), and comparing a Review adding and subtracting with time and finding elapsed time.

Mathematics 600 Lesson Objectives

Unit 5: FRACTION OPERATIONS	
Assignment	**Objectives**
Fractions with Like Denominators	Add and subtract fractions with like denominators.
Fractions with Unlike Denominators	Add and subtract fraction with unlike denominators.
Mixed Numbers	Add and subtract mixed numbers.
Renaming Mixed Numbers	Subtract with mixed numbers. Rename mixed numbers.
Multiplying Fractions	Evaluate an expression using the order of operations. Multiply two proper fractions. Multiply a fraction and a whole number.
Multiplying Mixed Numbers	Multiply mixed numbers.
Dividing Fractions	Find the reciprocal of a fraction. Divide proper fractions and whole numbers. Evaluate fraction expressions
Dividing Mixed Numbers	Find the reciprocal of a mixed number. Divide with mixed numbers.
Length	Convert between customary units of length. Estimate and measure with customary units of length.
Weight	Estimate and measure with customary units of weight. Convert between customary units of weight.
Capacity	Estimate and measure with customary units of capacity. Convert between customary units of capacity.
Review	Review multiplying and dividing fractions. Review adding and subtracting fractions with like and unlike denomina Review estimating and measuring with customary units. Review adding and subtracting mixed numbers. Review converting customary units. Review multiplying and dividing mixed numbers.

Mathematics 600 Lesson Objectives

Unit 6: RATIO, PROPORTION, AND PERCENT	
Assignment	**Objectives**
Ratios	Use a ratio to compare two quantities. Use a ratio table to solve a problem. Express a ratio in lowest terms.
Geometry: Circumference	Find the circumference of a circle. Understand that the ratio of circumference to diameter is pi.
Rates	Determine a unit rate. Compare rates. Solve problems using a unit rate.
Proportions	Solve a proportion for a missing value. Determine if two ratios form a proportion.
Solving Proportions	Use a proportion to solve for a missing value. Determine if two ratios form a proportion .
Scale Drawings	Use a proportion to find a length in a scale drawing.
Project: Make a Scale Drawing	Draw a floor plan of your classroom or bedroom.
Converting Between Decimals and Percents	Use a decimal or percent to represent the same value. Understand that the same model can be used to represent a decimal, Compare and order decimals, fractions, and percents.
Converting Between Fractions and Percents	Use a fraction or percent to represent the same value. Understand percent.
Data Analysis: Circle Graphs	Interpret a circle graph. Display information in a circle graph.
Percent of a Number	Find the percent of a number.
Review	Review proportions. Review circumference of a circle. Review percent and finding the percent of a number. Review circle graphs. Review ratios and rates. Review scale drawings.

Mathematics 600 Lesson Objectives

Unit 7: PROBABILITY AND GEOMETRY	
Assignment	**Objectives**
Introduction to Probability	Find the theoretical probability of a simple event.
Complementary Events	Find the theoretical probability of a simple event and its complement.
Sample Space	Display the sample space of an event on a tree diagram, list, or table. Find the probability of independent events.
Project: Theoretical vs. Experimental Probability	Find the experiment probability of an event.
Introduction to Geometry	Identify basic geometric components. Use correct geometric terminology and notation.
Measuring and Classifying Angles	Classify and measure acute, obtuse, right, and straight angles.
Angle Relationships	Use angle relationships (vertical, complementary, and supplementary)
Triangles	Classify triangles based on their attributes. Find a missing angle measure of a triangle.
Quadrilaterals	Classify quadrilaterals based on their characteristics. Find a missing angle measure of a quadrilateral.
Polygons	Classify polygons based on their attributes.
Congruent and Similar Figures	Determine if two figures are congruent, similar, or neither.
Review	Find the theoretical probability of a simple event and its complement. Determine if two figures are congruent, similar, or neither. Classify acute, obtuse, right, and straight angles. Classify triangles, quadrilaterals, and other polygons based on their att Find a missing angle measure of a triangle or a quadrilateral. Use correct geometric terminology and notation. Display the sample space of an event on a tree diagram, list, or table a Use angle relationships (vertical, complementary, and supplementary)

Mathematics 600 Lesson Objectives

Unit 8: GEOMETRY AND MEASUREMENT	
Assignment	**Objectives**
Perimeter	Review how to find the circumference of a circle. Find the perimeter of a polygon.
Area of Parallelograms	Find the area of a parallelogram.
Area of Triangles	Find the area of a triangle. Understand the relationship between the area of parallelograms and t
Area of Composite Figures	Find the area of simple composite figures.
Area of Circles	Find the area of a circle.
Project: Estimating Area	Estimate the area of irregular figures.
Solid Figures	Compare attributes of solid figures. Classify solid figures.
Surface Area of Rectangular Prisms	Find the surface area of a rectangular prism.
Volume of Rectangular Prisms	Find the volume of a rectangular prism.
Finding Missing Dimensions	Find a missing dimension of a rectangular prism, given the surface area
Project: Triangular Prisms	Find the surface area and volume of a triangular prism.
Review	Find the perimeter of a polygon. Use correct units for measurement. Review finding the circumference of a circle. Find the area of a parallelogram, a triangle, a circle, and simple comp Classify solid figures. Find a missing dimension of a rectangular prism, given the surface area Find the surface area and volume of a rectangular prism.

Mathematics 600 Lesson Objectives

Unit 9: INTEGERS AND TRANSFORMATIONS	
Assignment	**Objectives**
Integers	Know that zero pairs are opposite integers and add to zero. Represent integers as points on the number line. Represent integers in everyday life.
Comparing and Ordering Integers	Compare and order integers.
Absolute Value	Use absolute value in order of operations. Compare and order absolute value numbers. Find the absolute value of a number.
Coordinate Plane	Graph ordered pairs on the coordinate plane, in all four quadrants.
Addition	Add with integers.
Subtraction	Subtract with integers.
Multiplication	Multiply with integers.
Division	Divide with integers.
Translations	Know that translations, reflections, and rotations preserve size and shap Determine the effect of a translation on a point in the coordinate plan
Reflections and Rotations	Identify whether a figure has been rotated and the degree of rotation. Determine the affect of a reflection on a point in the coordinate plane
Line Symmetry	Draw symmetrical figures. Identify line symmetry.
Review	Compare and order integers. Determine the effect of a translation or a reflection on a point in the c Identify line symmetry. Add, subtract, multiply, and divide with integers. Know that translations, reflections, and rotations preserve size and shap Identify whether a figure has been rotated, and the degree of rotation Represent integers as points on the number line. Find the absolute value of a number.

Mathematics 600 Lesson Objectives

Unit 10: EQUATIONS AND FUNCTIONS	
Assignment	**Objectives**
Equations	Determine if a given value is a solution of a one- or two-step equation.
Writing Equations	Translate and write one- and two-step equations.
Addition Equations	Solve one-step addition equations using inverse operations.
Subtraction Equations	Solve one-step subtraction equations using inverse operations.
Multiplication Equations	Solve one-step multiplication equations using inverse operations.
Division Equations	Solve one-step division equations using inverse operations.
Inequalities	Determine if a given value is a solution of a one- or two-step inequality Translate inequality statements
Graphing Inequalities	Graph inequality statements.
Functions	Find an output of a function, given the function rule and an input value
Function Rules	Determine a function rule. Find an input of a function, given the function rule and an output value
Graphing Functions	Find the equation for a function that has been graphed on a coordina Graph functions on a coordinate plane
Review	Determine if a given value is a solution of a one- or two-step equation. Solve one-step addition, subtraction, multiplication, and division equat Given two of the following: the function rule, an output value, and an i Determine if a given value is a solution of a one- or two-step inequality Graph inequality statements. Translate and write one- and two-step equations and inequalities. Graph functions on a coordinate plane.

Mathematics 600 Lesson Objectives

Unit 11: COURSE REVIEW AND EXAM	
Assignment	**Objectives**
Course Review 1	Review the International System of Units and U.S. Customary System of Review collecting, describing, organizing, and interpreting data. Review whole numbers and their properties. Review decimal numbers and computing with decimal numbers. Review fractions and computing with fractions.
Course Review 2	Review equations and functions. Review two-dimensional geometry. Review ratios, proportions, and percents. Review probability. Review integers. Review three-dimensional geometry. Review the coordinate plane and transformations.

Mathematics 600 Lesson Objectives

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Mathematics 700 Lesson Objectives

Unit 1: INTEGERS	
Assignment	**Objectives**
Integers on the Number Line	Locate integers on the number line. Represent positive and negative values.
Comparing and Ordering Integers	Compare two integers using inequality symbols. Put a group of integers in order.
Absolute Value	Find pairs of opposite numbers. Determine the absolute value of a number. Write an inequality statement with an absolute value
Adding Integers with the Same Sign	Add integers with the same sign. Use addition to solve word problems.
Adding Integers with Different Signs	Use addition to solve word problems. Use the rule of zero pairs to add integers. Add integers with different signs.
Subtracting Integers	Use subtraction to solve word problems. Subtract integers.
Multiplying Integers	Multiply integers.
Dividing Integers	Divide integers.
Using Integers	Determine which operation to use in a given situation. Solve problems using Addition, subtraction, multiplication, and division.
The Real Number System	Classify numbers.
Real Number Properties	Identify the associative, commutative, and identity properties. Use the associative, commutative, and identity properties to simplify ex
The Distributive Property	Use the distributive property to simplify expressions.
Order of Operations	Use the order of operations to simplify expressions.
Exponents and the Order of Operations	Use the order of operations to simplify expressions. Use exponents to represent repeated multiplication.
Review	Review absolute value. Review using integers to solve word problems. Review the order of operations. Review comparing and ordering integers. Review exponents. Review locating integers on the number line. Review adding, subtracting, multiplying, and dividing integers. Review the real number system and its properties.

Mathematics 700 Lesson Objectives

Unit 2: FRACTIONS	
Assignment	**Objectives**
Fractions and Mixed Numbers	Round fractions and mixed numbers. Convert between mixed numbers and improper fractions. Identify the different parts of fractions and mixed numbers.
Equivalent Fractions	Identify equivalent fractions. Identify fractions written in simplest form.
Divisibility Rules and Prime Factorization	Use a factor tree to find the prime factorization of a number. Factor numbers. Identify a number as prime or composite. Identify the basic divisibility of a number.
Greatest Common Factor and Least Common Multiple	Find the LCM of a set of numbers. Define the difference between the GCF and the LCM of a set of numb Find the GCF of a set of numbers.
Adding and Subtracting Fractions with Like Denominators	Add and subtract mixed numbers. Subtract fractions with like denominators. Add fractions with like denominators.
Adding and Subtracting Fractions with Unlike Denominators	Add fractions with unlike denominators. Subtract fractions with unlike denominators.
Reducing Fractions	Determine the GCF of the numerator and denominator of a fraction. Reduce or simplify fractions.
Comparing and Ordering Fractions	Compare and order fractions using the LCD.
Multiplying Fractions	Use estimation to determine the reasonableness of an answer. Multiply fractions and mixed numbers.
Dividing Fractions	Use estimation to determine if an answer is reasonable. Determine the reciprocal of a given fraction. Divide fractions and mixed numbers.
Project: Chef for a Day	Add, subtract, and multiply fractions and mixed numbers. Reduce fractions to lowest terms. Convert between improper fractions and mixed numbers.
Review	Review comparing and ordering fractions. Review finding equivalent fractions. Review operations with fractions and mixed numbers. Review parts of fractions and mixed numbers. Review simplifying fractions. Review the different types of fractions. Review the GCF and LCM of a set of numbers.

Mathematics 700 Lesson Objectives

Unit 3: DECIMALS	
Assignment	**Objectives**
Comparing and Ordering Decimals	Recognize the decimal place value . Put a group of decimals in ascending and descending order. Identify the larger decimal in pairs or small groups of decimals.
Rounding and Estimating Decimals	Round decimals to specified place values. Apply rounding skills to help with estimating.
Adding and Subtracting Decimals	Add and subtract decimals.
Multiplying and Dividing Decimals	Calculate the product of a whole number and a decimal number. Divide decimal numbers by powers of ten. Calculate the quotient of two decimal numbers. Calculate the product of two decimal numbers.
Terminating and Repeating Decimals	Distinguish between terminating and repeating decimals. Convert decimals into simplified fractions.
Fractions as Decimals	Rewrite fractions and mixed numbers as decimal numbers.
Using Decimals	Solve problems containing decimals and fractions.
Scientific Notation	Write numbers in scientific notation. Interpret numbers in scientific notation.
The Metric System	Identify metric units. Convert metric units using multiplication or division.
Review	Review rounding and estimating decimal numbers. Review converting between metric (SI) units. Review scientific notation. Review comparing and ordering decimal numbers. Review converting between decimal numbers and fractions. Review solving application problems that contain decimal numbers ar Review adding, subtracting, multiplying, and dividing decimal number

Mathematics 700 Lesson Objectives

Unit 4: PATTERNS AND EQUATIONS	
Assignment	**Objectives**
Working with Variables and Expressions	Translate a word phrase into a mathematical expression. Use a variable to represent an unknown number.
Translating Word Sentences	Write an equation to represent a word problem. Translate between word sentences and mathematical equations.
Evaluating Expressions	Evaluate expressions for specific variables. Substitute values in for variables in an expression.
Using Formulas to Solve Problems	Use a formula to solve a problem.
Identifying Number Patterns	Identify arithmetic and geometric sequences. Find the next term in an arithmetic or geometric sequence. Describe an arithmetic or geometric sequence with an equation. Use an equation for an arithmetic or geometric sequence to find the v
Identifying Functions	Determine if a set of inputs and outputs represents a function.
Identifying Function Rules	Identify the function rule for a set of inputs and outputs. Translate a verbal phrase to a mathematical expression.
Solving Equations Using Mental Math	Solve a simple equation using mental math.
Solving Equations Using Addition and Subtraction	Solve equations using addition. Solve equations using subtraction.
Solving Equations Using Multiplication and Division	Solve equations using multiplication. Solve equations using division.
Solving Two-Step Equations	Solve two-step equations using the four basic operations. Translate word problems into two-step equations and then solve.
Working with Inequalities	Graph the solution to an inequality on the number line. Translate word sentences into mathematical inequalities.
Solving One-Step Inequalities	Solve one-step inequalities and graph the solution set on a number line
Review	Review arithmetic and geometric sequences and the equations that c Review using variables to represent unknown numbers. Review evaluating expressions and formulas for specific values. Review functions and function rules. Review solving equations using the four operations. Review solving inequalities and graphing the solution sets on a number Review translating between word phrases or sentences and mathema

Mathematics 700 Lesson Objectives

Unit 5: RATIOS AND PROPORTIONS	
Assignment	**Objectives**
Ratios	Write and simplify ratios. Write and simplify rates. Compare ratios using unit rates.
Proportions	Write and solve proportions.
Converting Customary Units	Convert between customary units.
Converting Metric Units	Convert between units in the metric system.
Similarity	Use a proportion to find a missing length of a similar triangle. Recognize and work with similar figures.
Scale Drawings	Use proportions to find missing lengths.
Converting Between Fractions, Decimals, and Percents	Convert percents to fractions and decimals. Convert fractions and decimals to percents.
Percent of a Number	Find the percent of a number.
Percent of Change	Calculate a percent of change.
Solving Percent Problems Using Proportions	Solve percent problems using a proportion.
Solving Percent Problems Using Equations	Solve percent problems using an equation.
Review	Review converting between metric units. Review converting between customary units. Review recognizing similar figures and working with scale drawings. Review finding the percent of a number and the percent of change. Review writing and solving proportions. Review writing and simplifying ratios and rates. Review converting between fractions, decimals, and percents. Review solving percent problems using a proportion or an equation. Review comparing ratios using unit rates. Review using a proportion to find a missing length of a similar triangle.

Mathematics 700 Lesson Objectives

Unit 6: PROBABILITY AND GRAPHING	
Assignment	**Objectives**
Theoretical Probability	Determine the theoretical probability of an event.
Experimental Probability	Determine the experimental probability of an event.
Sample Space	Use the counting principle to find the sample space. Determine the sample space for an experiment. Determine if a game is fair.
Independent and Dependent Events	Determine the probability of independent and dependent events. Determine if events are independent or dependent.
Graphing Ordered Pairs	Plot ordered pairs on a rectangular coordinate system.
Graphing Linear Equations	Given a graph of a linear function, write the equation. Use a table to graph a linear equation.
Slope	Determine the slope of a linear function.
Direct Variation	Graph direct variations. Identify the slope of a direct variation. Determine if a function is a direct variation.
Review	Review determining if events are independent or dependent. Review using a table to graph a linear equation. Review determining the probability of independent and dependent ev Review determining the sample space for an experiment. Review graphing direct variations. Review determining the theoretical and experimental probability of an Review determining the slope of a linear function, including direct varia Review plotting ordered pairs on a rectangular coordinate system. Review determining if a function is a direct variation.

Mathematics 700 Lesson Objectives

Unit 7: DATA ANALYSIS	
Assignment	**Objectives**
Collecting Data	Make predictions from a sample. Determine whether a question is biased or unbiased. Determine whether a sample is biased or random.
Determining Mean, Median, and Mode	Determine the mean, median, and mode of a set of data.
Using Mean, Median, and Mode	Use the mean to find a missing value. Calculate the mean, median, and mode. Determine which measure of central tendency should be used in a situ Determine the effect of an outlier on an average.
Using Range	Find the range of a set of data. Determine the effect of outliers on the range and the interquartile rang Find the interquartile range of a set of data.
Box-and-Whisker Plots	Interpret box-and-whisker plots. Construct a box-and-whisker plot for a set of numbers. Identify the different parts of a box-and-whisker plot.
Stem-and-Leaf Plots	Interpret a stem-and-leaf plot. Construct a stem-and-leaf plot.
Histograms	Interpret a histogram. Construct a histogram from a stem-and-leaf plot or a frequency table.
Other Graphs	Display data in a pictograph. Use a Venn diagram to organize information and solve problems.
Line Graphs	Interpret and construct line graphs. Use a line graph to make predictions about the data.
Bar Graphs	Construct bar graphs and double bar graphs. Interpret bar graphs and double bar graphs.
Circle Graphs	Construct and interpret circle graphs. Determine the percent and degree measures of sections on a circle gr
Scatter Plots	Make predictions from a set of data represented by a scatter plot. Construct and interpret scatter plots.
Review	Review making predictions from a random sample, line graph, or scatt Review how to construct, interpret, and use the following graphs: box-a Review how to use Venn diagrams to solve problems. Review how to define and find the measures of central tendency and Review the definitions of biased and unbiased samples and questions.

Mathematics 700 Lesson Objectives

Unit 8: GEOMETRY	
Assignment	**Objectives**
Introduction to Geometry	Identify basic geometric components. Measure angles using a protractor Use correct geometric terminology and notation. Classify angles by their measures.
Special Pairs of Angles	Use angle properties to determine missing angle measures. Identify special pairs of angles.
Polygons	Determine the measure of an interior angle of a regular polygon. Identify polygons and use correct geometric terminology to describe t
Circles	Identify parts of a circle. Use circle properties to find missing measures.
Project: Inscribed Polygons	Inscribe regular polygons in circles using a protractor, compass, and str
Triangles	Find a missing angle measure of a triangle. Identify and classify types of triangles.
Quadrilaterals	Find a missing measure of a quadrilateral. Identify and classify types of quadrilaterals.
Similar Polygons	Identify similar and congruent figures. Use properties of similar and congruent figures to solve problems. Identify corresponding parts of similar and congruent figures.
Symmetry	Determine if a figure has line or rotational symmetry.
Reflections	Determine the coordinates of an image following a reflection.
Translations	Determine the coordinates of an image following a translation.
Compound Transformations	Determine the coordinates of an image following a compound transfo
Review	Review using angle and circle properties to determine missing angle m Review identifying corresponding parts of similar and congruent figures Determine if a figure has line symmetry or rotational symmetry. Review identifying basic geometric components and shapes. Determine the coordinates of an image following a reflection, translati Review using properties of similar and congruent figures to solve proble

Mathematics 700 Lesson Objectives

Unit 9: MEASUREMENT AND AREA	
Assignment	**Objectives**
Perimeter	Use the perimeter of a polygon to find a missing side length. Calculate the perimeter of a polygon.
Circumference	Use the circumference of a circle to find the radius or diameter. Calculate the circumference of a circle.
Composite Figures	Calculate the perimeter of a composite figure.
Area of Parallelograms	Calculate the perimeter of a composite figure.
Area of Triangles and Trapezoids	Calculate the area of a triangle. Calculate the area of a trapezoid.
Area of Circles	Calculate the area of a circle.
Area of Composite Figures	Calculate the area of a composite figure.
Dimension Changes	Determine the area of a figure after its dimensions have changed.
Squares and Square Roots	Calculate the square of a number. Calculate the square root of a number. Determine between which two integers a square root lies.
The Pythagorean Theorem	Use the Pythagorean theorem to find a missing length of a side of a rig
Applying the Pythagorean Theorem	Apply the Pythagorean theorem to solve word problems.
Review	Review squares and square roots. Review using the Pythagorean Theorem to find a missing side length of Review finding the area of parallelograms, triangles, trapezoids, circles Review using the perimeter, circumference, or area of a plane figure t Review finding the perimeter or circumference of a plane figure. Review how changes in dimension affect the area of a plane figure.

Mathematics 700 Lesson Objectives

Unit 10: SURFACE AREA AND VOLUME	
Assignment	**Objectives**
Classifying and Identifying Solids	Classify and identify solid figures.
Nets	Identify and sketch the net of a solid figure.
Surface Area and Volume	Use an algorithm to find the surface area or volume of a solid figure. Explain what surface area and volume mean.
Surface Area of Rectangular Prisms	Use a net to find the surface area of a rectangular prism. Use a formula to find the surface area of a rectangular prism.
Volume of Rectangular Prisms	Use a formula to find the volume of a rectangular prism.
Surface Area of Triangular Prisms	Use a net to find the surface area or a triangular prism. Use a formula to find the surface area of a triangular prism.
Volume of Triangular Prisms	Find the volume of any triangular prism.
Surface Area of Cylinders	Use a formula to find the surface area of a cylinder.
Volume of Cylinders	Use a formula to find the volume of a cylinder.
Dimension Changes	Find the surface area or volume of a solid figure given a change in the Determine how the surface area or volume of a solid figure is affected
Review	Review the volume formulas for rectangular prisms, triangular prisms, a Review how to classify, identify, and draw the net of solid figures. Review the definitions of surface area and volume. Review the effects of dimension changes on the surface area and volu Review the surface area formulas for rectangular prisms, triangular pris Review how to find the surface area and volume of solid figures using t

Mathematics 700 Lesson Objectives

Unit 11: COURSE REVIEW AND EXAM	
Assignment	**Objectives**
Course Review 1	Review translating, solving, and graphing functions, equations, and ine Review expressing negative and fractional values using integers, fracti Review applications of integers, fractions, decimals, percents, and pro Review using proportions to solve problems. Review comparing and ordering integers, fractions, decimals, and per Review computing with integers, fractions, and decimals.
Course Review 2	Review collecting, describing, organizing, and graphing data. Review transformations. Review probability. Review graphing functions. Review classifying angles and polygons. Review perimeter, area, surface area, and volume.

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Mathematics 700 Lesson Objectives

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Pre-algebra Lesson Objectives

Unit 1: THE REAL NUMBER SYSTEM	
Assignment	**Objectives**
Subsets of the Real Number System	Identify irrational numbers. Classify numbers.
Using Variables	Use substitution to simplify expressions and formulas. Identify a variable, term, or expression.
The Number Line	Locate numbers on the number line. Find the distance between two points on the number line. Evaluate numerical expressions containing absolute value symbols. Find the opposite of a number.
Comparing Rational Numbers	Place rational numbers on the number line. Use the correct inequality symbol to compare rational numbers.
Properties of the Real Numbers	Recognize and name number properties used in number sentences. Use number properties to make computation easier.
Exponents	Simplify expressions with positive bases and positive or negative exponents. Multiply and divide exponential expressions with positive bases and positive exponents. Represent powers as repeated multiplication.
Scientific Notation	Write numbers given in standard form in scientific notation. Write numbers given in scientific notation in standard form.
Square Roots	Simplify square roots that are not perfect squares. Determine if a square root is a rational or irrational number. Determine between which two integers an irrational root lies. Evaluate perfect square roots.
Order of Operations	Use the order of operations to simplify numerical expressions.
Review	Review comparing and ordering numbers. Review exponents. Review square roots. Review absolute value. Review classifying numbers. Review evaluating expressions that contain variables. Review scientific notation. Review the order of operations. Review the properties of real numbers.

Pre-algebra Lesson Objectives

Unit 2: MODELING PROBLEMS IN INTEGERS	
Assignment	**Objectives**
Translating Expressions and Equations	Translate written statements into math symbols, expressions, and equations. Represent a simple word problem as an equation.
Solving One-Step Equations	Identify the inverse operation needed to solve a one-step equation. Translate and solve one-step equations in context. Identify the property of equality used to solve a one-step equation.
Solving Two-Step Equations	Solve two-step equations using real numbers. Check solutions for reasonableness. Translate word problems into two-step equations and then solve.
Relations and Functions	Identify multiple representations of the same relations and/or functions. Identify a relation that is a function. Identify inputs and outputs, and domains and ranges.
Functions	Evaluate a function given a value. Complete a function table. Recognize a function represented in various ways: rule, table, mapping, etc. Understand function notation.
Analyzing Graphs	Match a story with a graph. Answer questions based on a graph by reading and interpreting the graph. Use ordered pairs to graph a function.
Addition of Integers	Add integers. Add integers within the context of a word problem.
Subtraction of Integers	Subtract integers. Understand that subtracting an integer is the same as adding the opposite integer. Subtract integers within the context of a word problem.
Multiplying and Dividing Integers	Apply rules of multiplying and dividing integers to expressions and word problems.
Evaluating Expressions	Evaluate expressions by substituting values for variables. Evaluate expressions in the set of integers using the order of operations.
Graphing	Find the value of a missing coordinate by using its graph. Name ordered pairs on a graph. Complete a t-chart for a function rule and graph the function Graph points in the coordinate plane.

Pre-algebra Lesson Objectives

Unit 2: MODELING PROBLEMS IN INTEGERS (CONT.)	
Assignment	**Objectives**
One-Step Equations	Solve one-step equations in integers. Recognize equivalent expressions by using number properties.
Two-Step Equations	Solve two-step equations in the integers. Check solutions.
Problem Solving	Solve an equation and check for the reasonableness of the solution in the context of the problem. Write an equation to represent a word problem.
Review	Review solving one-step and two-step equations, with real numbers and integers. Review identifying domains, ranges, independent variables, dependent variables, and inputs and outputs. Review identifying relations and functions in their many forms, including ordered pairs, mapping diagrams, t-charts, and graphing. Review translating contextual situations into one-step and two-step equations before solving them. Review graphing functions and reading the graphs of functions. Review operations of integers.

Pre-algebra Lesson Objectives

Unit 3: MODELING PROBLEMS WITH RATIONAL NUMBERS	
Assignment	**Objectives**
Prime Factorization and the GCF	Express the prime factorization of composite numbers and terms in exponential form. Determine the greatest common factor using prime factorization. Solve problems by applying the greatest common factor.
Simplifying Fractions	Reduce positive and negative fractions. Reduce fractions with variables.
The LCM and the LCD	Find the least common multiple (LCM) of two or more terms. Find the least common denominator (LCD) of two or more fractions.
Adding and Subtracting Like Fractions	Add and subtract fractions and mixed numbers with like denominators. Add and subtract fractions that have variables. Convert between improper fractions and mixed numbers.
Adding and Subtracting Unlike Fractions	Add and subtract fractions with unlike denominators. Add and subtract fractions with variables.
Adding and Subtracting Decimal Numbers	Subtract positive and negative decimal numbers. Add positive and negative decimal numbers. Use estimation to predict results and check answers.
Multiplying and Dividing Fractions	Solve word problems that require the multiplication and division of fractions and mixed numbers. Use estimation and rounding to check for the reasonableness of an answer. Multiply and divide positive and negative fractions and mixed numbers.
Multiplying and Dividing Decimal Numbers	Multiply and divide positive and negative decimal numbers. Use estimation and rounding to check for the reasonableness of an answer. Solve word problems that require the multiplication or division of decimal numbers.
One-Step Addition and Subtraction Equations	Write and solve one-step addition and subtraction equations involving fractions and decimals. Check solutions in equations and determine their reasonableness by estimating.
One-Step Multiplication and Division Equations	Write and solve one-step multiplication and division equations involving fractions and decimals. Check solutions in equations and determine their reasonableness by estimating.
Two-Step Equations	Check solutions by using estimation. Solve one and two-step equations involving decimal and fractional values.

Pre-algebra Lesson Objectives

Unit 3: MODELING PROBLEMS WITH RATIONAL NUMBERS (CONT.)	
Assignment	**Objectives**
One-Step Inequalities	Solve one-step inequalities. Graph the solution of an inequality on the number line. Write an inequality to represent and solve a word problem.
Two-Step Inequalities	Graph the solution set of an inequality on the number line. Write an inequality to represent and solve a word problem. Solve two-step inequalities.
Review	Review prime factorization of numbers and finding greatest common factors and least common multiples. Review operations involving positive and negative fractions and decimals. Review solving one-step and two-step inequalities with real numbers. Review graphing inequalities on a number line. Review solving one-step and two-step equations with real numbers.

Pre-algebra Lesson Objectives

Unit 4: PROPORTIONAL REASONING	
Assignment	**Objectives**
Proportions	Solve for a missing value in a proportion. Determine if an equation is a proportion. Write ratios and proportions.
Applications	Use proportional reasoning to solve problems. Determine unit rate or unit price.
Direct Variation	Use the constant of variation to determine the equation of a direct variation. Calculate the constant of variation. Calculate a missing value in a direct variation problem. Recognize a relationship as a direct variation.
Fraction, Percent and Decimal Equivalents	Convert between fractions, decimals, and percents. Compare and order fractions, decimals, and percents.
Solving Percent Problems	Determine if the answer to a percent problem is reasonable. Calculate the missing value in a percent problem.
Applications	Write an equation to represent a word problem involving percents. Solve a word problem involving percents.
More Applications	Find percent increase or percent decrease in a word problem. Solve multi-step word problems involving percents.
Unit Conversion within Customary Units	Convert customary units. Solve problems that require unit conversions of measurements.
Unit Conversion within Metric Units	Convert metric units.
Corresponding Parts	Identify similar figures. Identify congruent figures and their corresponding parts. Solve for a missing measure in similar figures.
Indirect Measure	Draw a picture to model and then solve a word problem involving similar triangles. Identify similar triangles in diagrams involving overlapping triangles.
Models and Scales	Determine the scale between a model and actual object. Calculate a missing measure using a scale.
Review	Review using similar figures to solve for a missing measure and to measure indirectly. Review solving percent problems. Review converting metric units. Review converting and comparing fractions, decimals, and percents. Review direct variations. Review using proportions to solve for a missing value. Review converting customary units.

Pre-algebra Lesson Objectives

Unit 5: MORE WITH FUNCTIONS	
Assignment	**Objectives**
Rewriting Equations	Solve for a missing value in a formula. Rewrite formulas to solve for a specific variable.
Combine Like Terms	Identify like terms in an algebraic expression. Combine like terms in an algebraic expression.
Solving Equations by Combining Like Terms	Solve equations that require combining like terms on one side of the equation. Write equations with like terms from a contextual situation. Check answers for reasonableness.
Distributive Property	Identify equivalent expressions. Use the distributive property to simplify algebraic expressions.
Solving Equations with Distributive Property	Write equations with the distributive property from word problems. Check answers for reasonableness in context. Solve equations using the distributive property to simplify.
Slope	Find the slope of a line on a graph. Find the slope of a line given two points. Identify the type of slope from a graph.
Using Intercepts	Substitute values into the equation for a line to find the intercepts. Graph a line from its intercepts. Identify the x-intercept and the y-intercept of a line.
Slope-Intercept Form	Rearrange equations to put them in slope-intercept form. Identify equations in slope-intercept form.
More Slope-Intercept Form	Write an equation in slope-intercept form when given the slope and the intercept. Find the slope and the intercept to write an equation in slope-intercept form.
Non-Linear Functions	Graph quadratic and absolute value functions from t-charts. Complete t-charts for quadratic and absolute value equations. Identify a quadratic equation and an absolute value equation from graphs.
Patterns and Arithmetic Sequences	Determine if a sequence is arithmetic. Find the common difference in an arithmetic sequence. Extend an arithmetic sequence. Use a formula to calculate the nth term of an arithmetic sequence.
Geometric Sequences	Extend a geometric sequence. Determine if a sequence is geometric. Find the common ratio in a geometric sequence.

Pre-algebra Lesson Objectives

Unit 5: MORE WITH FUNCTIONS (CONT.)	
Assignment	**Objectives**
Exponential Sequences	Graph exponential functions, of both growth and decay. Identify exponential growth from both an equation and a graph. Complete t-charts for exponential growth. Identify exponential decay from both an equation and a graph.
Recursive Sequences	Extend a recursive sequence. Determine if a sequence is recursive.
Review	Review graphing a line, given the slope and/or intercepts. Review solving multi-step equations that involve one or more of the following: distributive property, combining like terms, and equivalent expressions. Review solving literal equations. Review graphing quadratic and absolute value graphs. Review finding a slope from a graph, mathematically, or from an equation. Review extending number sequences, including arithmetic, geometric, exponential, and recursive. Review finding intercepts. Review graphing exponential functions. Review identifying the type of slope from a graph. Review writing equations in slope-intercept form.

Pre-algebra Lesson Objectives

Unit 6: MEASUREMENT	
Assignment	**Objectives**
Classify and Measure Angles	Classify pairs of angles. Find the measure of an angle. Identify angles by their measure.
Perpendicular and Parallel Lines, Part 1	Identify a transversal and the angles it creates. Find the measure of angles created by a transversal. Identify lines as parallel, intersecting, or perpendicular.
Perpendicular and Parallel Lines, Part 2	Identify the relationships between angles created by a transversal across parallel lines. Find the measure of the angles created by a transversal across parallel lines. Find the measure of angles created by vertical lines. Find the measures of complementary and supplementary angles.
Circles	Identify the parts of a circle. Classify angles and arcs of circles. Find the measures of arcs and angles of circles.
Classifying Polygons	Name a polygon from its properties. Identify the different parts of polygons (sides, vertexes, diagonals, interior angles, and exterior angles). Classify polygons as regular or irregular. Classify polygons as concave or convex. Identify which figures are polygons.
Interior and Exterior Measures of Polygons	Find the exterior angle measures of polygons. Recognize the relationship that exists between the number of sides of a polygon and the sum of the measures of its interior angles. Find the interior angle measures of polygons.
Classifying Triangles and the Triangle Inequality Theorem	Determine if three sides can create a triangle. Classify a triangle by its angles. Classify a triangle by its sides.
The Quadrilateral Family	Recognize the relationships among the different types of quadrilaterals. Identify the name of a quadrilateral by its properties.
Pythagorean Theorem, Part 1	Find the length of a leg using the Pythagorean theorem. Find the length of a hypotenuse using the Pythagorean theorem. Determine if 3 side lengths create a right triangle.
Pythagorean Theorem, Part 2	Solve a contextual problem using the Pythagorean theorem. Write an equation to find the missing side of a right triangle. Draw and label a right triangle from a contextual problem.

Pre-algebra Lesson Objectives

Unit 6: MEASUREMENT (CONT.)	
Assignment	**Objectives**
Review	Review identifying and finding measures of angles created by transversals. Review classifying triangles and the triangle inequality theorem. Review classifying polygons and finding measures of their interior and exterior angles. Review classifying and measuring angles and lines. Review classifying quadrilaterals and the relationships among them. Review finding side lengths of right triangles using the Pythagorean theorem. Review parts of circles and their measures.

Pre-algebra Lesson Objectives

Unit 7: PLANE GEOMETRY	
Assignment	**Objectives**
Perimeter and Circumference	Estimate the circumference or perimeter of a figure. Find unknown dimensions of a figure by solving algebraic equations. Find the circumference or perimeter of a figure.
Area of Parallelograms	Calculate the area of a parallelogram. Find a missing side length or height of a parallelogram. Classify parallelograms based on their properties.
Area of Triangles and Trapezoids	Find the area of a triangle or trapezoid. Use the area formulas to find a missing measure in a triangle or trapezoid.
Area of Circles	Use the area formula of a circle to find a missing measure.
Composite Figures	Determine the area of a composite figure using common area formulas. Recognize the common shapes that make up a composite figure.
Effects of Dimensional Changes	Determine how dimension changes affect the area and perimeter of a shape.
Symmetry	Write equations of lines of symmetry for shapes in a coordinate plane. Determine if a shape has line symmetry or rotational symmetry. Identify lines of symmetry in shapes.
Distance and Midpoint	Solve word problems using distance and midpoint. Find the distance between two points. Find the midpoint between two points.
Reflections	Identify lines of reflection in a picture and coordinate plane. Determine the coordinates of an image or pre-image across a line of reflection.
Translations	Use ordered-pair notation to determine a translation. Identify a transformation as a reflection, translation, or rotation. Determine the coordinates of the image or pre-image in a translation.
Tessellations	Identify a tessellation. Know which regular polygons will tessellate.
Rotations	Find the coordinates of an image that has been rotated Identify rotation in a picture.
Dilations	Find the coordinates of an image or pre-image point in a dilation. Identify dilations as different from the other transformations. Determine whether a dilation is an enlargement or a reduction. Find the scale factor for a dilation.

Pre-algebra Lesson Objectives

Unit 7: PLANE GEOMETRY	
Assignment	**Objectives**
Review	Review line and rotational symmetry. Review using the formulas for perimeter, circumference, or area to find a missing measure of a plane figure. Review how changes in dimension affect the perimeter or area of a plane figure. Review the properties of parallelograms and trapezoids. Review the four types of transformations and how to find the coordinates of an image or pre-image. Review finding the distance and midpoint of two points on a number line or coordinate plane. Review finding the perimeter, circumference, or area of a plane figure.

Pre-algebra Lesson Objectives

Unit 8: MEASURES OF SOLID FIGURES	
Assignment	**Objectives**
Solid Figures	Identify the number of faces, edges, and vertices for a figure. Classify a three-dimensional figure by its characteristics. Name a three-dimensional figure by its base(s). Identify the net of a three-dimensional figure.
Euler's Formula	Identify the relationship that exists among the number of faces, edges, and vertices of a solid figure. Determine the number of faces, lateral faces, edges, and vertices of each geometric solid.
Surface Area of Rectangular Prisms	Find a missing measure given the surface area. Calculate the surface area of rectangular prisms using its surface area formula. Calculate the surface area of rectangular prisms using a net.
Surface Area of Triangular Prisms	Find the surface area of a triangular prism using its net. Solve for a missing measure when given the surface area and other dimensions of a triangular prism. Calculate the surface area of a triangular prism.
Surface Area of Cylinders	Determine the surface area of a net of a cylinder. Understand the derivation of the surface area formula for a cylinder. Calculate the surface area of a cylinder using its formula. Find the length of the curved surface of a cylinder.
Surface Area of Pyramids, Cones, and Spheres	Solve for a missing measure when given the surface area and other dimensions of a pyramid, cone, or sphere. Calculate the surface area of a pyramid using the net of the figure. Find the surface area of a pyramid, a cone, and a sphere using formulas.
Surface Area of Composite Figures	Identify the solids of a composite figure. Calculate the surface area of a composite figure.
Volume of Rectangular Prisms	Find a missing dimension of a rectangular prism when given the volume and all but one of the other dimensions. Find the volume of a rectangular prism.
Volume of Triangular Prisms	Find the unknown measure of a triangular prism when given the volume and the other dimensions. Find the volume of a triangular prism.
Volume of Square Pyramids	Find the unknown measure of a square pyramid when given the volume and the other dimensions. Find the volume of a square pyramid.

Pre-algebra Lesson Objectives

Unit 8: MEASURES OF SOLID FIGURES (CONT.)	
Assignment	**Objectives**
Volume of Cylinders	Find a missing dimension when given the volume of a cylinder. Calculate the volume of a cylinder.
Volume of Cones	Define the relationship that exists between the volume of a cone and the volume of a cylinder with the same dimensions. Calculate the volume of a cone. Find a missing dimension of a cone when given the volume and the other dimension.
Volume of Spheres	Find the volume of spheres.
Changes to Volume	Find the new volume of a geometric solid after changes to the dimensions have been made. Determine how changes in dimensions affect a shape's volume.
Volume of Composite Figures	Find the volume of a composite figure.
Review	Review identifying the number of faces, bases, lateral faces, edges, and vertices for geometric solids. Review Euler's formula. Review calculating the volume of geometric solids and composite figures. Review identifying geometric solids from three-dimensional, pictorial representations. Review calculating the surface area of geometric solids and composite figures. Review identifying geometric solids from net representations.

Pre-algebra Lesson Objectives

Unit 9: DATA ANALYSIS	
Assignment	**Objectives**
Collecting Data	Identify a sample as biased or unbiased. Make predictions from a sample. Interpret a tally chart to identify trends and make predictions about the general population.
Measures of Central Tendency and Dispersion	Calculate the missing value of a data set when given the mean and the rest of the data set. Identify the mean, median, mode, and range for a set of data.
Bar Graphs	Interpret a bar graph. Construct a bar graph from a set of data.
Circle Graphs	Construct a circle graph from a set of data. Compare quantities of a circle graph. Interpret a circle graph as parts of a whole.
Line Graphs	Identify the parts of a line graph. Interpret line graphs.
Frequency and Histograms	Construct stem-and-leaf plots, frequency tables, and histograms from sets of data.
Constructing Box-and-Whisker Plots	Identify the median and the quartiles of a set of data. Construct a box-and-whisker plot from a set of data.
Interpreting Box-and-Whisker Plots	Interpret a box-and-whisker plot. Identify the lower quartile, upper quartile, and the median from a box-and-whisker plot. Identify the extreme values of a set of data from a box-and-whisker plot.
Scatter Plots	Interpret a scatter plot. Identify a line of best fit for a scatter plot. Classify a trend/correlation on a scatter plot.
Misleading Graphs	Identify how a graph is misleading. Identify the changes needed to correct a misleading graph.
Appropriate Displays	Choose the correct graph to display information. Identify types of data.
Review	Review how to determine the appropriate data display for a given set of data. Review the two types of data. Review bar graphs, circle graphs, line graphs, stem-and-leaf plots, histograms, box-and-whisker plots, and scatter plots. Review how graphs can be misleading. Review the measures of central tendency and dispersion. Review the various types of samples.

Pre-algebra Lesson Objectives

Unit 10: PROBABILITY	
Assignment	**Objectives**
Tree Diagrams and the Counting Principle	Use the counting principle to identify probabilities. Identify all the possible outcomes for a given situation. Use tree diagrams to identify probabilities.
Permutations	Use permutations to count all possible outcomes. Use combinations to count all possible outcomes.
Mixed Review of Outcomes	Identify if a problem involves combinations or permutations. Use the combination formula to determine the total possible outcomes. Use the permutation formula to determine the total possible outcomes.
Probability and Odds	Define theoretical probability, fairness, and odds. Find probability and odds for given situations.
Experimental vs Theoretical Probability	Find the experimental probability of an event. Use experimental probability to make predictions about future trials. Use the theoretical probability to predict experimental probability.
Disjointed and Overlapping Events	Find the probability of a disjointed event. Find the probability of an overlapping event.
Independent and Dependent Events	Find the probability of dependent events. Identify if events are independent or dependent. Find the probability of independent events.
Simulate a Problem	Use a simulation to determine the experimental probability of a problem. Compare and contrast the theoretical probability with the experimental probability.
Quest: All That's Fair In...	Calculate the theoretical probability of an event. Determine if a game is fair. Calculate the experimental probability of an event. Create a game that is fair.
Review	Review identifying and computing probabilities of independent and dependent events. Review determining the number of possible outcomes using tree diagrams and the fundamental counting principle. Review identifying and evaluating permutation and combination problems. Review finding theoretical and experimental probabilities. Review identifying and computing probabilities of overlapping and disjointed events.

Pre-algebra Lesson Objectives

Unit 11: COURSE REVIEW AND EXAM	
Assignment	**Objectives**
Review I	Review translating, solving, and graphing functions, equations, and inequalities. Review properties of the real number system. Review using proportions to solve problems.
Review II	Review probability. Review ways to analyze and display information. Review using algebraic properties to solve geometry and measurement problems.

Algebra I Lesson Objectives

Unit 1: FOUNDATIONS OF ALGEBRA	
Assignment	**Objectives**
Variables and Expressions	Identify a variable expression and its components: variable, coefficient, constant. Interpret an algebraic expression. Translate expressions written as English phrases into algebraic expressions.
Exponents and Order of Operations	Simplify mathematical expressions containing exponents. Simplify mathematical expressions using the order of operations.
Evaluating Expressions	Evaluate algebraic expressions for given values of the variables.
Classifying and Comparing Numbers	Classify a real number as natural (counting), whole, integer, rational, or irrational. Compare and order real numbers and graph them on the number line. Name the additive inverse of a given number.
Decimal-Fraction Conversions	Convert repeating decimals to fractions. Convert terminating decimals to fractions.
Fractions	Identify the additive identity and multiplicative inverse of a number. Perform operations with decimal numbers. Perform operations with fractions. Round decimal numbers to a specified place value.
Adding and Subtracting Signed Numbers	Add signed numbers. Subtract signed numbers. Divide signed numbers. Multiply signed numbers.
Absolute Value	Evaluate expressions containing absolute value symbols.
Commutative and Associative Properties	Identify the commutative and associative properties of addition and multiplication. Use real number properties to simplify algebraic expressions.
Distributive Property	Identify the distributive property. Identify the terms of an algebraic expression. Use the distributive property to simplify algebraic expressions. Identify like terms in an algebraic expression.
Simplifying Expressions	Simplify algebraic expressions by removing parentheses and combining like terms.
Review	Review absolute value. Review comparing and ordering real numbers. Review evaluating algebraic expressions. Review operations with real numbers. Review properties of real numbers. Review simplifying algebraic expressions. Review simplifying numerical expressions.

Algebra I Lesson Objectives

Unit 2: LINEAR EQUATIONS	
Assignment	**Objectives**
Open Sentences	Simplify algebraic expressions using properties of zero and one. Translate sentences into algebraic equations.
Addition Property of Equality	Use the addition property of equality to solve equations. Use the addition property of equality to solve word problems.
Multiplication Property of Equality	Use the multiplication property of equality to solve equations. Use the multiplication property of equality to solve word problems.
Two-Step Equations	Solve two-step equations by using both the addition and multiplication properties of equality.
Variables on Both Sides	Solve multi-step equations that have the variable term on both sides.
Combining Like Terms	Solve multi-step equations by combining like terms on one or both sides of the equation first.
The Distributive Property	Solve multi-step equations.
Literal Equations	Solve a literal equation for a specified variable.
Writing Equations from Word Problems	Solve word problems with one unknown by writing and solving an equation.
Two Unknowns	Solve a word problem by writing and solving a related equation. Write an equation to represent a word problem.
More than Two Unknowns	Express one unknown in terms of another for a word problem. Solve word problems with more than two unknowns using an equation.
Using a Chart	Solve word problems by writing and solving a related equation.
Percent Problems	Calculate percent increase and decrease. Convert between fractions, decimals, and percents. Solve percent problems.
Mixture and Interest Problems	Solve investment word problems. Solve mixture word problems. Write an equation to represent a mixture word problem. Write an equation to represent an investment word problem.
Review	Review how to solve a literal equation for a specified variable. Review how to solve equations. Review how to solve percent problems. Review how to write equations to represent problems.

Algebra I Lesson Objectives

Unit 3: FUNCTIONS	
Assignment	**Objectives**
The Coordinate Plane	Identify and plot points in the coordinate plane. Identify the axes, origin, and quadrants in the coordinate plane. Identify the quadrant in which a point lies in the coordinate plane. Write an equation to express a relationship between coordinates in the plane.
Identifying Functions	Identify a function from a set of ordered pairs, a table, a mapping, or a graph. Identify the domain and range of a relation.
Function Notation	Evaluate a function for a value of the dependent variable using a function rule, graph, or table. Find the value of the independent variable of a function given the dependent variable.
Modeling Functions	Graph a function from its equation. Identify the graph of a function that models a real life relationship.
Writing a Function Rule	Write a function rule from a given set of ordered pairs or graph. Write a function rule to represent a real-world problem.
Arithmetic Sequences	Extend an arithmetic sequence. Find the common difference of an arithmetic sequence. Find the nth term of an arithmetic sequence. Identify an arithmetic sequence.
Direct Variation	Determine the constant of variation of a direct variation. Identify a function as being a direct variation. Solve a word problem involving a direct variation. Write the equation of a direct variation.
Slope	Given two points on a line, calculate the slope using the slope formula. Use the graph of a line to determine if the slope is positive, negative, zero, or undefined (no slope). Use the graph of a line to determine the slope.
Linear Equations	Determine if an equation is linear. Find the x- and y-intercepts of a line. Graph a linear equation by finding solutions of the equation. Write a linear equation from a word sentence. Write a linear equation in general form.

Algebra I Lesson Objectives

Unit 3: FUNCTIONS (CONT.)	
Assignment	**Objectives**
Slope-Intercept Form	Graph a line using the slope and y-intercept. Identify the slope and y-intercept of a line from the given equation. Write a linear equation in slope-intercept form.
Absolute Value Functions	Describe how the graph of $\|x\|$ is translated in the coordinate plane based on the equation. Identify the graph of an absolute value function in the form $y = \|x\| + c$. Identify the graph of an absolute value function in the form $y = \|x + c\|$.
Writing Linear Equations (1)	Write the equation of a line given the graph. Write the equation of a line given the slope and y-intercept. Write the equation of a line given the y-intercept and another point on the line.
Writing Linear Equations (2)	Write the equation of a line given the slope and a point on the line that is not the y-intercept. Write the equation of a line given two points on the line where neither is the y-intercept.
Writing Linear Equations (3)	Find the slope of a line parallel to a given line. Find the slope of a line perpendicular to a given line. Write the equation of a line parallel to a given line. Write the equation of a line perpendicular to a given line.
Review	Review arithmetic sequences and how to find the nth term. Review graphing and writing linear equations. Review how to use translations to graph absolute value equations of the form $y = \|x\| + c$ and $y = \|x + c\|$. Review the coordinate plane and how functions are modeled in the plane. Review what a function is, as well as how to read, write, and evaluate function notation.

Algebra I Lesson Objectives

Unit 4: INEQUALITIES	
Assignment	**Objectives**
Graphing	Graph a set of numbers on the number line. Identify and determine the number of subsets of a set. Use set builder notation to express a set. Write a set using the listing or rule method. Write the set that is represented by a graph.
Addition Property of Inequality	Determine if a value is a solution of an inequality. Graph the solution set of an inequality. Solve an inequality using the addition property of inequality.
Multiplication Property of Inequality	Solve an inequality using the multiplication property of inequality.
Multi-Step Inequalities	Solve multi-step inequalities.
Problem Solving	Solve word problems using an inequality. Translate phrases into inequality statements.
Compound Inequality Graphs	Graph a compound inequality. State the intersection of two sets. State the union of two sets. Write a compound inequality as a union or intersection.
Solving Compound Inequalities	Graph the solution set of a compound inequality. Solve a compound inequality.
Inequalities with Two Variables	Graph a linear inequality in the coordinate plane.
Absolute Value Solution Sets	State and graph the solution set of absolute value equations of the form $\|x + a\| = c$, where a and c are constants. State and graph the solution sets of absolute value equations of the form $\|x\| < c$, $\|x\| > c$, $\|x\| \leq c$, and $\|x\| \geq c$, where c is a constant.
Absolute Value Inequalities with One Variable	Solve and graph the solution sets of absolute value equations. Solve and graph the solution sets of absolute value inequalities.
Absolute Value Inequalities with Two Variables	Graph the solution sets of absolute value inequalities in the coordinate plane.
Review	Review how to graph two-variable inequalities in the coordinate plane. Review how to solve and graph compound inequalities. Review how to solve and graph one- and two-variable absolute value inequalities. Review how to solve inequalities using properties of inequality. Review how to state solution sets using set notation.

Algebra I Lesson Objectives

Unit 5: LINEAR SYSTEMS	
Assignment	**Objectives**
Solution of a System	Determine the number of solutions of a linear system. Identify a solution of a linear system graphically. Identify if a linear system is consistent, inconsistent, or equivalent.
Graphing Systems of Equations	Determine if a point is a solution of a system of linear equations. Determine the solution set of a linear system graphically.
Systems of Inequalities	Determine if a point lies in the solution set of a system of linear inequalities. Graph the solution set for a system of linear inequalities.
Substitution Method	Determine if an ordered pair is a solution of a system of two linear equations. Solve a system of two linear equations by the substitution method.
Addition Method	Determine if an ordered pair is a solution of a system of two linear equations. Solve a system of two linear equations using the addition method.
Matrices	Find the determinant of a 2 x 2 matrix. Find the system determinant, x determinant, and y determinant for a system of two linear equations. Solve a system of two linear equations algebraically using determinants. Write a system matrix for a linear system with two equations.
Fractional Coefficients	Identify a solution to a system of equations. Solve systems of equations containing fractional coefficients.
Using Two Variables	Use a system of linear equations to solve a word problem. Write a system of linear equations to represent a word problem.
Money and Unit Pricing	Solve a system of equations to represent coin and pricing problems. Write a system of equations to represent coin and pricing problems.
Using Formulas	Represent word problems involving formulas using a system of equations. Solve word problems involving formulas using a system of equations.
Review	Review how to apply systems of equations to solve word problems. Review solving linear systems algebraically by substitution, elimination, or determinants. Review solving linear systems graphically. Review what a solution to a system is and when a system has no, one, or infinite solutions.

Unit 6: SEMESTER REVIEW AND EXAM	
Assignment	**Objectives**
Review	Review and reinforce algebraic concepts from Units 1-5 in preparation for the semester exam.

Algebra I Lesson Objectives

Unit 7: POLYNOMIALS	
Assignment	**Objectives**
Adding and Subtracting Polynomials	Add polynomials using a vertical format. Recognize a polynomial and the number of terms it has. Subtract polynomials using a vertical format. Write a polynomial in descending order.
Grouping Symbols	Add polynomials using a horizontal format. Subtract polynomials using a horizontal format.
Multiplying by a Monomial	Multiply any polynomial by a monomial. Multiply monomials.
Multiplying Polynomials	Multiply polynomials with more than one term.
F.O.I.L. and Special Cases	Find products of binomials using the FOIL method. Use shortcuts for squaring a binomial and finding the difference of two squares.
Dividing by a Monomial	Divide monomials by monomials. Divide polynomials with more than one term by a monomial.
Long Division	Check the answer to a division problem with polynomials. Divide polynomials using long division.
Greatest Common Factor	Find the greatest common factor of a polynomial. Find the greatest common factor of two or more monomials. Use prime factorization to find the greatest common factor of two or more whole numbers.
Factoring Out the GCF	Check the factorization of a polynomial. Factor out the GCF of a polynomial.
Factoring by Grouping	Check the factorization of a polynomial. Factor four-term polynomials by grouping.
Factoring Trinomials (1)	Check the factorization of a polynomial. Factor trinomials with leading coefficients of one into a product of binomials.
Factoring Trinomials (2)	Check the factorization of a polynomial. Factor trinomials with leading coefficients other than one into a product of binomials.
Special Cases	Check the factorization of a polynomial. Factor perfect square trinomials. Factor the difference of two perfect squares.
Complete Factorization	Check the factorization of a polynomial. Factor a polynomial into prime factors.
Review	Review factoring. Review operations on polynomials. Review simplifying polynomial expressions.

Algebra I Lesson Objectives

Unit 8: EXPONENTIAL AND RADICAL FUNCTIONS	
Assignment	**Objectives**
Negative Exponents	Evaluate and simplify expressions with zero and negative exponents.
Exponential Expressions	Evaluate algebraic expressions containing integer exponents.
Scientific Notation	Convert between numbers in standard form and scientific notation.
Multiplication	Use the multiplication property of exponents to simplify products.
Raising to a Power	Simplify a power raised to a power using the rule of exponents. Simplify powers of products using the rule of exponents.
Division	Simplify quotients of powers using the rule of exponents.
Geometric Sequences	Extend a geometric sequence. Find the common ratio of a geometric sequence. Find the nth term of a geometric sequence. Identify a geometric sequence.
Simplifying Radicals	Simplify radicals having perfect nth root radicands. Multiply radicals with the same index. Simplify square roots that have a perfect square factor.
Dividing Radicals	Divide like radicals. Rationalize a fraction. Simplify radicals with fractional radicands.
Adding and Subtracting Radicals	Add and subtract radical expressions.
Radical Equations	Determine if a value is a solution of a radical equation. Solve equations with irrational solutions. Solve radical equations.
Review	Review operations with radical expressions. Review simplifying algebraic expressions that involve exponents. Review simplifying radicals. Review solving equations with irrational roots and radical equations. Review solving radical equations. Review the rules for exponents.

Algebra I Lesson Objectives

Unit 9: QUADRATICS	
Assignment	**Objectives**
Pythagorean Theorem	Apply the Pythagorean theorem to real life problems. Determine if the given sides form a right triangle. Use the Pythagorean theorem to find the missing length of a side of a right triangle.
Distance	Determine if a point lies on a circle with center at the origin. Find the distance between two points. Write the equation of a circle whose center is at the origin.
Midpoint	Find the center of a circle given the endpoints of a diameter. Find the coordinates of the midpoint of a line segment given the endpoints.
Quadratic Functions	Find ordered pairs on the graph of a quadratic function. Identify a quadratic equation. Identify the solutions of a quadratic equation from the related parabola. Write a quadratic equation in general form.
Transformations	Identify the vertex of a parabola from a given equation in standard form. Use translations and reflections of the graph of $y = x^2$ to graph parabolas whose equations are in standard form. Write the standard form of a quadratic equation from the given graph.
Line of Symmetry	Determine the line of symmetry and vertex of a parabola whose equation is in general form, $y = ax^2 + bx + c$. Graph a parabola whose equation is in general form, $y = ax^2 + bx + c$.
Quadratic Inequalities	Determine if a point is a solution of a quadratic inequality. Graph the solution set of a quadratic inequality. Identify the solution set of a quadratic inequality.
Solving by Factoring	Solve quadratic equations by factoring.
Square Root Method	Solve quadratic equations using the square root method.
Applications of Quadratics	Solve word problems by writing quadratic equations.
Completing the Square	Solve quadratic equations by completing the square. Solve quadratic equations by completing the square.
Quadratic Formula (1)	Use the quadratic formula to solve quadratic equations having rational roots.
Quadratic Formula (2)	Use the quadratic formula to solve quadratic equations having irrational roots.

Algebra I Lesson Objectives

Unit 9: QUADRATICS (CONT.)	
Assignment	**Objectives**
Review	Review graphing quadratic functions. Review solving quadratic equations. Review solving word problems by writing and solving a quadratic equation. Review the distance formula and the equation of a circle whose center is at (0, 0). Review the midpoint formula. Review the Pythagorean theorem.

Algebra I Lesson Objectives

Unit 10: RATIONAL EXPRESSIONS	
Assignment	**Objectives**
Simplifying Rational Expressions	Determine the excluded values of a rational expression. Reduce rational expressions.
Multiplying and Dividing Rational Expressions	Divide rational expressions. Multiply rational expressions.
Adding and Subtracting with Like Denominators	Add fractions that have a common denominator. Subtract fractions that have a common denominator.
Adding and Subtracting with Unlike Denominators	Add rational expressions with unlike denominators. Determine the lowest common denominator of rational expressions.
Proportions	Solve proportions.
Using the LCD	Solve equations containing rational expressions by clearing fractions.
Complex Fractions	Simplify complex fractions.
Inequalities	Solve inequalities containing rational expressions with variables in the numerators.
Applications of Rational Equations	Solve mixture problems using rational equations. Solve time, distance, and rate problems using rational equations. Solve work and pipe flow problems.
More Problems	Solve word problems by writing and solving rational equations.
Review	Review finding excluded values of rational expressions. Review how to perform operations with rational expressions. Review how to solve equations and inequalities containing rational expressions. Review how to solve word problems using an equation. Review how to write a rational expression in simplest form, including complex fractions. (Reduce.)

Algebra I Lesson Objectives

Unit 11: PROBABILITY AND STATISTICS	
Assignment	**Objectives**
Measures of Central Tendency	Determine if a sample is good. Find the mean, median, and mode of a given set of data. Interpret a frequency table. Interpret a stem-and-leaf plot.
Dispersion	Calculate quartiles of a data set. Find the range and inter-quartile range of a given data set. Identify outliers of a data set and determine how they affect a measure of central tendency. Interpret data presented in a histogram or box-and-whisker plot.
Interpreting Data	Interpret data displayed in a graph. Make predictions from a graph.
Project: Data Analysis	Collect, organize, and analyze data. Make predictions based on data.
Sampling and Outcomes	Determine the number of outcomes, or sample space, of an event using the multiplication principle. Determine the outcomes, or sample space, of an event using a table or a tree diagram.
Permutations	Determine the number of arrangements in an event. Evaluate and apply the permutation formula. Evaluate numeric expressions containing factorial notation.
Combinations	Evaluate and apply the combination formula.
Probability	Determine the theoretical probability of a single event.
Compound Events	Determine the theoretical probability of compound events.
Project: Probability	Calculate probabilities based on data. Collect and organize data. Use measures of central tendency to persuade.
Review	Review how statistics can be misleading. Review statistical measurements for central tendency and dispersion. Review the interpretation of graphs such as box-and-whisker plots and scatter plots. Review ways of determining outcomes of an event.

Unit 12: SEMESTER REVIEW AND EXAM	
Assignment	**Objectives**
Review	Review and reinforce algebraic concepts from Units 7–11 in preparation for the semester exam.

Geometry Lesson Objectives

Unit 1: INTRODUCTION	
Assignment	**Objectives**
Mathematic System: Set Theory Review	Identify finite and infinite sets Identify subsets of a given set Review and practice the rules of set theory
Mathematic System: Operations with Sets	Solve word problems using set theory and set operations Find the intersections and unions of sets (set operations)
Geometry Undefined Terms: Point	List properties and characteristics of the undefined term 'point'
Geometry Undefined Terms: Line	List properties and characteristics of the undefined term 'line'
Geometry Undefined Terms: Plane	List properties and characteristics of the undefined term 'plane'
Defined Terms: Definitions	Define segment, ray, and collinear Identify and name examples of segments, rays when prompted Indicate whether two lines are collinear or not
Geometric Postulates	Identify characteristics of postulates
Review of Algebraic Postulates	Apply postulates to solve word problems
Geometric Theorems	Recall and relate geometric theorems on points, lines, and planes
Review of Properties of Algebra	Review properties of algebra

Geometry Lesson Objectives

Unit 2: LOGIC	
Assignment	**Objectives**
Logic	Define and identify types of logical statements Recognize and use strategies of logic
Conjunctions	Use a truth table to analyze conjunctions Classify a conjunction as true or false
Disjunctions	Classify a conjunction as true or false Use a truth table to analyze disjunctions
Negation	Classify a negation as true or false
Conditional or Implication Statements	Solve problems using conditional statements Use truth tables to judge conditional statements
Converse, Inverse, Contrapositive	Determine if a statement is true or false Identify the converse, inverse, and contrapositive of conditional statements
Inductive Reasoning	Identify statements as inductive or not inductive Use inductive reasoning to draw reasonable conclusions
Deductive Reasoning	Identify the major and minor premises of a syllogism Draw conclusions from premises
Using Deductive Reasoning	Use deductive reasoning to prove basic theorems
Proof Formats: Statement of the Theorem	Rewrite statements in 'if-then' form Identify the essential parts of a two-column proof
Proof Formats: The Figure	Identify the appropriate figure for a proof
Proof Formats: The Given Statement	Identify the 'given' information in a two-column proof
Proof Formats: To Prove Statement	Identify the statement to prove in a two-column proof
Proof Formats: The Plan of the Proof	Match statements with reasons Describe several strategies for planning a proof
Indirect Proof Format: The Paragraph Proof	Prove some simple statements using the indirect method, or contradiction Write the negation of a statement

Geometry Lesson Objectives

Unit 3: ANGLES AND PARALLELS	
Assignment	**Objectives**
Angle Definitions	Name an angle and its parts Identify and describe perpendicular angles Identify and describe acute, right, and obtuse angles Identify and describe betweeness of angles
Angle Measurement	Find the sum of angle measures Use a protractor to measure angles
Angle Relationship Definitions	Define and identify adjacent angles Define and identify supplementary angles Define and identify complementary angles Define and identify vertical angles
Angle Relationship Theorems (1)	Use theorems about adjacent, complementary, supplementary and vertical angles to answer questions and complete proofs
Angle Relationship Theorems (2)	Use theorems about adjacent, complementary, supplementary and vertical angles to answer questions and complete proofs
Construction: Copying Figures	Copy a figure by using mathematical construction techniques
Construction: Bisecting Figures	Bisect figures by using mathematical construction techniques
Basic Properties of Parallels	Define and describe properties of parallelism of lines and planes
Transversals and Special Angles	Calculate angle measures using transversals Name the angles formed by a transversal Complete proofs by applying properties and theorems of tranversals
More Proofs: Transversals and Special Angles	Define and identify exterior and interior angles Complete proofs using your knowledge of transversals
Continued Proofs: Transversals and Special Angles	Practice proofs and questions that relate to parallels and transversals
More Proofs for Postulates 9 and 10	Practice proofs and questions that relate to parallels and transversals
Construction: Perpendiculars	Construct a line that is perpendicular to another line at a given point
Construction: Tangents to Circles	Construct a line that is tangent to a circle at a given point
Construction: Parallels	Construct a line that is tangent to a circle at a given point
Classifying Triangles by Sides and Angles	Identify triangles as scalene, isosceles, or equilateral Identify triangles as acute, obtuse, or equiangular

Geometry Lesson Objectives

Unit 3: ANGLES AND PARALLELS (CONT.)	
Assignment	**Objectives**
Exterior and Remote Interior Angles of a Triangle	Find the measures of exterior and remote interior angles Define exterior and remote interior angles of a triangle
Proofs Involving Triangles	Review exterior and interior angles of triangles Prove theorems and corollaries using auxiliary lines Define corollary Define auxiliary line
Other Polygons	Find the angle measures of polygons Apply properties of polygons to solve problems Categorize a shape as a polygon or non-polygon Identify different kinds of polygons

Geometry Lesson Objectives

Unit 4: CONGRUENT TRIANGLES AND QUADRILATERALS	
Assignment	**Objectives**
Defining Congruent Triangles	Identify corresponding parts of congruent triangles Define congruent triangles Judge whether two triangles are congruent or not
Proving Triangles Congruent (1)	Prove that triangles are congruent using the ASA Theorem Prove that triangles are congruent using side and angle postulates
Proving Triangles Congruent (2)	Prove that triangles are congruent using the ASA Theorem Prove that triangles are congruent using side and angle postulates
Proving Right Triangles Congruent	Prove that right triangles are congruent using the Hypotenuse-Leg Theorem
Independent Triangles (1)	Prove that angles are congruent using triangle congruence theorems on non-overlapping triangles Prove that line segments are congruent using triangle congruence theorems on non-overlapping triangles
Independent Triangles (2)	Prove that line segments are congruent using triangle congruence theorems on non-overlapping triangles Prove that angles are congruent using triangle congruence theorems on non-overlapping triangles
Overlapping Triangles (1)	Prove that angles are congruent using triangle congruence theorems on non-overlapping triangles Prove that line segments are congruent using triangle congruence theorems on non-overlapping triangles
Overlapping Triangles (2)	Prove that angles are congruent using triangle congruence theorems and properties of isosceles triangles
Isosceles Triangles (1)	Prove that angles are congruent using triangle congruence theorems Prove that angles are congruent using properties of isosceles triangles Prove that line segments are congruent using properties of isosceles triangles Know properties of triangles Prove that line segments are congruent using triangle congruence theorems

Geometry Lesson Objectives

Unit 4: CONGRUENT TRIANGLES AND QUADRILATERALS (CONT.)	
Assignment	**Objectives**
Isosceles Triangles (2)	Prove that line segments are congruent using triangle congruence theorems Prove that angles are congruent using properties of isosceles triangles Prove that line segments are congruent using properties of isosceles triangles Prove that angles are congruent using triangle congruence theorems Know properties of triangles
Construction of Triangles 30-60-90	Construct 30-60-90 right triangles Construct triangles given two sides and the included angle Construct triangles given three sides
Construction of Triangles 45-45-90	Construct 45-45-90 right triangles Construct a median and an altitude of a triangle
Inequality Theorem in One Triangle Part 1	Use angle measures to prove when one side of a triangle is longer than another side Use side lengths to prove when one angle of a triangle is larger than another angle
Inequality Theorem in One Triangle Part 2	Use side lengths to prove when one angle of a triangle is larger than another angle Use angle measures to prove when one side of a triangle is longer than another side
Inequality Theorem in Two Triangles	Determine when sides of two different triangles are equal Determine when one side of a triangle is greater than or less than another side
Quadrilateral Parallelograms Theorems Part 1	Use properties of parallelograms to prove statements
Quadrilateral Parallelograms Theorems Part 2	Use properties of parallelograms to prove statements
Triangles that Use Parallelograms in Proofs	Use parallelograms to prove statements about triangles
Parallelograms: Rectangles	Prove statements involving the rectangle Prove statements involving the rhombus
Parallelograms: Rhombus	Prove statements involving the rectangle Prove statements involving the rhombus Understand how special parallelograms are related
Trapezoids-Definitions and Proofs	Prove statements involving trapezoids

Geometry Lesson Objectives

Unit 5: SIMILAR POLYGONS	
Assignment	**Objectives**
Algebra and Ratios	Express ratios in their simplest forms Use geometric figures to find a ratio
Algebra Properties and Proportions	Solve proportions in one variable, including in the context of word problems Know the definition of a proportion Identify the means and extremes of a proportion
Properties of Proportions	Solve proportions in two variables Relate proportions to geometric figures
Meaning of Similarity	Identify similar triangles Prove when triangles are similar Define similarity State key properties of similarity
Meaning of Similarity-Theorems	Know important facts about similar triangles Prove when triangles are similar
Meaning of Similarity-Proofs	Prove when triangles are similar Know important facts about similar triangles
Theorems-Similar Polygons	Use facts about similarity to calculate side measures of similar polygons Know facts about similar polygons
Theorems-Special Segments in Triangles	Find segment measure in triangles using special relationships and proportions
Similar Right Triangles	Use the altitude of a right triangle to create proportions Find the geometric mean of two numbers Solve for unknown segment measures
The Pythagorean Theorem	Solve for missing sides of a right triangle Determine whether three segments form a right triangle or not
Theorem about 30-60-90 Right Triangles	Find the side measures of right triangles by applying special properties of 30-60-90 right triangles
Theorem about 45-45-90 Right Triangles	Find the side measures of right triangles by applying special properties of 45-45-90 right triangles
Using Triangles: Rectangular Solids	Apply the Pythagorean theorem when solving for parts of rectangular solids

Geometry Lesson Objectives

Unit 5: SIMILAR POLYGONS (CONT.)	
Assignment	**Objectives**
Using Triangles: Regular Square Pyramid	Apply the Pythagorean theorem to solve for side lengths and other measures of a regular square pyramid Identify the parts of a regular square pyramid
Trigonometry-Sine Ratio	State the sine ratio of a given angle Use a table of sine values to solve for a missing value
Trigonometry-Cosine Ratio	State the cosine ratio of a given angle Use a table of cosine values to solve for a missing value
Trigonometry-Tangent Ratio	Use a table of tangent values to solve for a missing value State the tangent ratio of a given angle
Using Similar Triangles in Indirect Measurement	Use properties of similar triangles to measure lengths indirectly
Using Trigonometry in Indirect Measure	Use properties of similar triangles to measure lengths indirectly

Unit 6: SEMESTER REVIEW AND EXAM	
Assignment	**Objectives**
Review	Review and reinforce geometry concepts from Units 1-5 in preparation for the semester exam.

Geometry Lesson Objectives

Unit 7: CIRCLES	
Assignment	**Objectives**
Characteristics of Circles	Calculate measures of parts of a circle Identify and define the parts of a circle
Characteristics of Spheres	Identify and define the parts of a circle Calculate measures of parts of a circle
Tangents	Calculate measures of parts of a circle Identify and define the parts of a circle
Arcs	Use the definitions of major and minor arcs to find angle and arc measures Define and identify major and minor arcs
Chords	Prove theorems that relate to tangents, arcs, and chords of a circle Practice finding the measures of major and minor arcs
Theorems (1)	Practice finding the measures of major and minor arcs Prove theorems that relate to tangents, arcs, and chords of a circle
Theorems (2)	Prove theorems that relate to tangents, arcs, and chords of a circle Practice finding the measures of segments and angles
Special Angles Type 1	Use properties of inscribed angles and intercepted arcs to solve problems and complete proofs Identify and define inscribed angles and intercepted arcs
Special Angles Type 2	Identify angles formed by intersecting secants Solve for angle and arc measures when secant lines intersect inside a circle
Special Angles Type 3	Solve for angle and arc measures when secant lines intersect outside a circle
Special Segments	Find the lengths of chords, secants, and tangents
Construction: Circles	Construct a circle given three points Construct a circle circumscribing a triangle Construct a circle circumscribed by a triangle

Geometry Lesson Objectives

Unit 8: AREA AND VOLUME	
Assignment	**Objectives**
Area Concepts of Polygons	Recognize that polygons can be broken into non-overlapping triangles Find the area of a polygon by breaking it into triangles
Area of Rectangles	Find the area of a rectangle Solve problems involving areas of rectangles
Area of Parallelograms	Find the area of a parallelogram Solve problems involving areas of parallelograms
Area of Triangles and Rhombuses	Find the area of a rhombus Find the area of a triangle
Area of Trapezoids	Find the area of a trapezoid
Area of Regular Polygons	Find the area of a regular polygon, including equilateral triangles A square is a regular polygon An equilateral triangle is a regular polygon
Area Comparisons of Polygons	Find area and linear measures such as side length of regular polygons that are similar
Construction: Polygons	Construct a rectangle, parallelogram, hexagon, and octagon
Circles: Circumference and PI	Find the circumference of a circle when given the radius Understand the derivation of the circumference formula Find the radius of a circle when given the circumference
Circles: Area of Circles	Find the area of a circle Find the area of a circle that is similar to another circle
Circles: Area of Sectors	Find the arc length of a sector Find the area of a sector, or 'slice' of a circle
Circles: Area of Segments	Find the area of a segment of a circle Find the area of unusual shapes using the areas of sectors and segments
Solids: Prisms	Find the surface area and volume of a prism
Solids: Pyramids	Find the surface area and volume of a pyramid
Solids: Cylinders	Find the surface area and volume of a cylinder
Solids: Cones	Find the surface area and volume of a cone
Solids: Spheres	Find the surface area and volume of a sphere

Geometry Lesson Objectives

Unit 8: AREA AND VOLUME (CONT.)	
Assignment	**Objectives**
Construction: Dividing a Segment	Divide a segment into a given number of equal segments
Construction: 4th Proportion	Construct a line segment that is in proportion to the other three
Construction: The Geometric Mean	Construct a line segment that is the geometric mean of two given line segments

Geometry Lesson Objectives

Unit 9: COORDINATE GEOMETRY	
Assignment	**Objectives**
Symmetry	Find planes of symmetry Find points of symmetry Find lines of symmetry
Ordered Pairs: Points in a Plane	Plot points on a coordinate plane Find the coordinates for a point shown on the coordinate plane
Graphs of Algebraic Sentences	Review and practice graphing linear equations Graph combinations of linear equations and inequalities Review and practice graphing linear inequalities
Distance Formula	Find the lengths and perimeters of geometric shapes by using the distance formula Review and practice using the distance formula to find the distance between two points
Equation of a Circle	Find equation for a circle in the coordinate plane
Midpoint Formula	Find the midpoint of line segments Solve problems by using the midpoint formula
Slope	Test points to determine whether they are collinear (on the same line) Calculate slope of a line
Parallel and Perpendicular Lines	Use properties of lines to prove theorems Determine if lines are parallel, perpendicular, or neither (skew)
Equations of Lines	Find properties and measures of shapes using the coordinate plane Find the equation of a line given two points Find the equation of a line given a point on the line and the slope Find the equation of a line in standard form
Figures in the Coordinate Plane	Find properties and measures of shapes using the coordinate plane Use coordinate techniques to prove geometric statements
Proofs with Coordinate Geometry (1)	Prove theorems about plane figures using coordinate geometry
Proofs with Coordinate Geometry (2)	Prove theorems about plane figures using coordinate geometry

Geometry Lesson Objectives

Unit 10: TRANSFORMATIONS	
Assignment	**Objectives**
Introduction: Rigid Motion, or Isometry	Find the image points of a shape after a rigid motion Define isometry and the three types of rigid motion
Isometry: Reflection	If A is on the line n then A = A If A is not on the line n, then n is the perpendicular bisector of AA'
Isometry: Translation	Find the image of a shape after a translation
Isometry: Rotation	Find the image of a shape after a rotation
Dilation: Congruence and Similarity	Find the image of points after a dilation Tell the difference between a contraction and an expansion
Product Transformation	Find the result of combining multiple transformations
Inverse and Identity Transformation	Identify the inverse of a transformation

Unit 12: SEMESTER REVIEW AND EXAM	
Assignment	**Objectives**
Review	Review and reinforce geometry concepts from Units 7-11 in preparation for the semester exam.

Algebra II Lesson Objectives

Unit 1: SET, STRUCTURE, AND FUNCTION	
Assignment	**Objectives**
Properties of Sets	Count the number of elements in a set. Find the subsets of a set.
Operations of Sets	Find the intersection of two sets. Find the union of two sets.
Structure: Axioms	Review the axioms and properties of Algebra. Review the mathematical operations. (+, -, *, /)
Structure: Applications	Review the distributive property and order of operations.
Relations and Functions: Definitions	Find the domain and range of a function. Identify functions and relations, and tell the difference between them.
Relations and Functions: Graphs	Determine whether or not a given graph represents a function. Match a set of ordered pairs with its graph.
Relations and Functions: Function Notation	Evaluate a function at any point.
Relations and Functions: Inverses	Find the inverse of a function or set of ordered pairs.
Algebraic Expressions: Exponents Part 1	Write exponents in expanded (non-exponential) form.
Algebraic Expressions: Exponents Part 2	Evaluate expressions, including negative and zero exponents.
Algebraic Expressions: Multiplication and Division Part 1	Review exponent rules for multiplication and division of like bases.
Algebraic Expressions: Multiplication and Division Part 2	Review exponent rules for multiplication and division of like bases.
Exponents of Exponential Expressions	Review exponent rules for exponentiation of powers.
Algebraic Expressions: Combining Terms	Review the process of simplifying expressions and combining like terms.

Algebra II Lesson Objectives

Unit 2: NUMBERS, SENTENCES, AND PROBLEMS	
Assignment	**Objectives**
Number Order and Absolute Value	Solve absolute value equations. Use equal, greater than, and less than signs to order numbers.
Sums and Products	Review addition and multiplication of signed numbers.
Solving Equations	Review and practice solving linear equations with the addition property.
Multiplication Property	Review and practice solving linear equations with the multiplication property.
Multi-step Equations	Solve linear equations using both multiplication and addition properties.
Equations with Parentheses	Solve equations with parentheses by using the distributive property.
Literal Expressions	Solve literal equations. Substitute values to evaluate literal expressions.
Solving Inequalities	Differentiate between the multiplication property of inequality and the multiplication property of equality. Solve linear equalities.
Graphing Solution Sets for Inequalities	Express the solutions of single variable inequalities using a line graph. Review solving single variable inequalities using the Addition and Multiplication Properties. Write the solution set that is represented by a line graph.
Compound Sentences	Graph compound inequalities. Solve absolute value inequalities.
Number Problems	Solve word problems with whole numbers.
Motion Problems	Solve problems involving rate, distance, and time.
Miscellaneous Problems	Solve practical real-world problems.

Algebra II Lesson Objectives

Unit 3: LINEAR EQUATIONS AND INEQUALITIES	
Assignment	**Objectives**
Line Graphs	Evaluate two-variable equations and find ordered pairs. Identify linear and nonlinear equations.
Line Graphs by Two Points	Determine if two lines are parallel or perpendicular. Graph linear equations.
Slope of Lines Part 1	Compute the slope of a line.
Slope of Lines Part 2	Find collinear points. Use the slope of a line to calculate missing coordinates. Using given coordinates, determine if a line is horizontal or vertical.
Equations: Point Slope Part 1	Use the point-slope technique to find the equation of a line from its graph.
Equations: Point Slope Part 2	Use the point-slope technique to find the equation of a line from its graph.
Equations: Point Slope Part 3	Find the equation of a line when given two points on the line.
Equations: Slope-Intercept	Find the x-intercept of a linear equation. Write equations of a line in slope-intercept form.
General Equation of a Line	Find the x and y intercepts by inspecting the general form of a line. Write linear equations in general form.
Solutions for Systems of Equations	Solve a system of two equations using graphical methods
Solutions by Addition	Solve a system of two equations by using the addition property of equality.
Solutions by Substitution	Solve a system of two equations by using the substitution property of equality.
Application of Systems of Equations	Apply your knowledge of systems of equations to solving word problems.
Solving Inequalities	Graph the solution sets for linear inequalities.
Solving Two-order Inequalities	Graph the solution sets for linear inequalities.

Algebra II Lesson Objectives

Unit 4: POLYNOMIALS	
Assignment	**Objectives**
Products and Factoring	Simplify product expressions.
Multiplying Polynomials by Polynomials	Multiply binomials and trinomials.
Using Special Products Part 1	Find special products such as the perfect square trinomial. Find the difference of two squares.
Using Special Products Part 2	Find the product of the difference of two perfect cubes. Find the product of the sum of two perfect cubes.
Factoring Trinomials	Factor trinomials.
Factoring Special Products Part 1	Factor perfect square trinomials. Factor trinomials using the difference of two squares.
Factoring Special Products Part 2	Factor trinomials using the difference of two cubes.
Addition and Subtraction Operations	Add and subtract polynomials.
Division with Polynomials	Perform long division of polynomials.
Synthetic Division	Use shorthand 'synthetic' division to divide two polynomials.
Direct Variation	Solve word problems that involve direct variation of two quantities.
Inverse Variation	Solve word problems that involve inverse variation of two quantities.
Joint and Combined Variation	Solve word problems that involve joint or combined variation of three quantities.

Algebra II Lesson Objectives

Unit 5: ALGEBRAIC FRACTIONS	
Assignment	**Objectives**
Multiplying and Dividing with Fractions	Evaluate algebraic expressions Simplify algebraic expressions
Reducing Rational Expressions	Identify exclusions in algebraic fractions. Reduce fractions. Simplify algebraic expressions.
Multiplying Algebraic Fractions	Multiply algebraic expressions.
Dividing Algebraic Fractions	Divide algebraic expressions.
Adding and Subtracting Algebraic Fractions	Add and subtract fractions. Find the common denominator of algebraic fractions.
Addition and Subtraction	Add and subtract algebraic fractions.
Mixed Expressions and Complex Fractions	Change complex fractions to simple algebraic fractions. Change mixed numbers to simple algebraic fractions.
Equations with Fractions	Solve equations that contain algebraic fractions.
Fractional Equations	Solve equations that contain variables in the denominator of a fraction.
Proportions	Solve proportions of algebraic equations that have one variable.
Applications of Fractions	Use skills of working with algebraic fractions to solve word problems.
Mixture Problems	Solve mixture problems.
Work Problems	Solve problems that involve the measurements of 'Work' energy.

Unit 6: SEMESTER REVIEW AND EXAM	
Assignment	**Objectives**
Review	Review and reinforce algebraic concepts from Units 1–5 in preparation for the semester exam.

Algebra II Lesson Objectives

Unit 7: REAL NUMBERS	
Assignment	**Objectives**
Real Numbers	Identify a number as Rational or Irrational. Write the fractional equivalent of a Rational decimal number.
Law of Radicals	Change a radical expression to the equivalent expression with fractional exponents. Evaluate and simplify radical expressions and fractional exponent expressions.
Conjugates	Define a conjugate. Use conjugates to rationalize the denominator of an algebraic expression.
Radical Equations	Determine whether or not a radical equation has solution(s).
Quadratic Equations	Solve quadratic equations.
Factoring Quadratic Equations	Solve quadratic equations by the factoring method.
Completing the Square	Solve quadratic equations by completing the square.
Quadratic Formula	Derive the quadratic formula. Use the quadratic formula to solve quadratic equations.
Word Problems Involving Quadratic Equations	Solve word problems by setting up and solving a quadratic equation using the quadratic formula.
Sum and Product of Roots	Determine the sum and product of the roots of a quadratic equation.
The Discriminant	Find the discriminant of a quadratic equation. Use the discriminant to determine what kinds of solutions a quadratic equation has.
Imaginary Numbers	Simplify complex numbers. Simplify imaginary expressions.

Algebra II Lesson Objectives

Unit 8: QUADRATIC RELATIONS AND SYSTEMS	
Assignment	**Objectives**
Distance Formula	Use the distance formula to find the distance between two points.
Circle	Find the center of a circle from its equation. Find the radius of a circle from its equation. Write the equation of a circle, given its center and radius.
Ellipse	Find the length of the major axis of an ellipse. Find the length of the minor axis of an ellipse.
Ellipse Continued	Find the equation of an ellipse. Find the foci of an ellipse. Graph an ellipse given an equation.
Conic Sections: Parabola	Find the directrix of a given. Find the focus of a given parabola. Graph a parabola.
Conic Sections: Parabola Continued	Determine the direction in which a parabola opens. Find the quadrant(s) in which a parabola resides.
Conic Sections: Hyperbola	Graph a hyperbola. Write the equation of a hyperbola.
Conic Sections: Hyperbola Continued	Find the equation of a hyperbola. Graph a hyperbola.
Identifying Conic Sections	Identify a quadratic equation as a circle, parabola, hyperbola, or ellipse.
Systems of Equations	Solve a system of equations
Solutions of Inequalities	Graph the solution to a system of inequalities.
Applications of Conic Sections–Part 1	Find the equation of a hyperbola that represents a physical situation.
Applications of Conic Sections–Part 2	Find the equation of a conic section that represents a physical situation.
Applications of Conic Sections–Part 3	Find the equation of a hyperbola that represents a physical situation.
Constant of Proportionality	Find the conic section that represents a given physical situation.

Algebra II Lesson Objectives

Unit 9: EXPONENTIAL FUNCTIONS	
Assignment	**Objectives**
Exponential Functions	Evaluate exponential functions. Simplify exponential functions.
Fractional Exponents	Evaluate expressions with fractional exponents. Simplify expressions with fractional exponents.
Exponential Equations	Solve exponential equations.
Graphing Exponential Functions	Complete ordered pairs for an exponential function.
Exponential Applications	Solve application word problems with exponential equations.
Logarithmic Functions	Express a logarithmic function in exponential form. Express an exponential equation in logarithmic form.
Evaluation of Logarithms	Evaluate logarithmic functions.
Evaluating Exponential Functions, Common Logarithms, and Natural Logarithms	Evaluate logarithm expressions Find common logarithms and natural logarithms
General Properties of Logarithms	Use the properties of logarithms to rewrite a logarithmic expression in a different form.
Scientific Notation	Express decimal numbers in scientific notation.
Calculation of Common Logarithms	Use change of base formula to evaluate common logarithms. Use the change of base formula to solve an exponential equation.
Graphs of Logarithmic Functions	Complete ordered pairs for a logarithmic function. Graph a logarithmic function.
Solving Logarithmic Equations	Solve equations using properties of logarithms.
Logarithmic Applications	Solve word problems using logarthmic functions.
Matrices	Identify entries in a matrix by row and column.
System Solutions with Matrices	Use the matrix method to solve a system of equations.
Addition and Multiplication of Matrices	Perform addition of matrices. Perform subtraction of matrices.

Algebra II Lesson Objectives

Unit 10: COUNTING PRINCIPLES	
Assignment	**Objectives**
Progressions: Sequences	Find the nth term in a sequence. Indicate the general term of a sequence.
Progressions: Series	Differentiate between a finite and an infinite series. Differentiate between an arithmetic and a geometric series. Use summation notation.
Permutations: Factorials	Evaluate factorial expressions.
Permutation Formula	Calculate the number of permutations of r elements from a set of n elements. Define permutation.
Permutations: Applications	Use permutations to solve application problems.
Combination Formula	Calculate the number of combinations of r elements from a set of n elements.
Combinations: Applications	Use combinations to solve application problems.
Combinations: Binomial Coefficients	Demonstrate knowledge of the pattern of Pascal's triangle. Find powers of binomials with Pascal's triangle.
Probability: Concepts	Calculate probabilities in single-step experiments. Explore the uses and limitations of probability theory.
Probability: Equally Likely Outcomes	Define the counting principle. Use the counting principle to calculate the probability of complex events.
Probability: Multiplication Principle	Define independent and dependent events. Use the multiplication principle to calculate the probability of complex events.
Conditional Probability	Use conditional probability to calculate the probability of events.

Algebra II Lesson Objectives

Unit 11: REVIEW	
Assignment	**Objectives**
Integers	Identify terms about graphing functions. Restate the axioms of algebra.
Integers Continued	Evaluate functions. Find the intersection and union of sets. Simplify exponential expressions, including exponential.
Open Sentences	Restate axioms and terms of algebra. Simplify numerical expressions, including absolute value.
Open Sentences Continued	Solve absolute value equations and inequalities. Solve linear equations and inequalities.
Graphs	Find the equation of a line. Graph linear inequalities. Restate definitions of graphing. Solve a system of equations. Write the equation of a line in standard form.
Graphs Continued	Graph linear equations. Graph linear inequalities. Solve a system of linear equations. Solve word problems with systems of equations.
Polynomials	Find the product of polynomial expressions. Solve variation problems.
Polynomials Continued	Divide polynomials by long division. Divide polynomials with synthetic division. Factor polynomials. Solve direct and joint variation problems.
Algebraic Fractions Part 1	Find the exclusions for a rational expression. Simplify algebraic expressions.
Algebraic Fractions Part 2	Add and subtract rational expressions. Multiply and divide rational expressions.
Algebraic Fractions Part 3	Simplify complex expressions. Simplify mixed expressions. Solve equations with mixed and complex expressions.
Real Numbers	Simplify radical expressions. Solve radical equations.
Real Numbers Continued	Simplify complex and imaginary expressions. Simplify radical expressions. Solve quadratic equations by completing the square. Solve quadratic equations by the quadratic formula.

Algebra II Lesson Objectives

Unit 11: REVIEW (CONT.)	
Assignment	**Objectives**
Quadratic Relations and Systems	Identify the type of conic section from its equation.
Quadratics Continued	Identify the coordinates of characteristics of conic sections. Identify the equation of a conic section. Solve systems of quadratic and linear equations.
Exponential Functions	Add and subtract matrices. Graph exponential equations. Simplify expressions with zero and negative exponents.
Exponential Functions Continued	Multiply matrices. Solve a system of linear equations. Write exponential equations in logarithmic form. Evaluate logarithms.
Counting Principles	Find the nth term of a sequence. Identify a sequence as arithmetic or geometric. Identify a series as finite or infinite.
Counting Principles Continued	alculate permutations and combinations. Find conditional probabilities. Find probabilities. Represent a series as a summation.

Unit 12: SEMESTER REVIEW AND EXAM	
Assignment	**Objectives**
Review	Review and reinforce algebraic concepts from Units 7–11 in preparation for the semester exam.

Pre-calculus Lesson Objectives

Unit 1: RELATIONS AND FUNCTIONS	
Assignment	**Objectives**
Ordered-Pair Numbers: Relations	Identify relations between ordered pairs. Solve for the domain and range of ordered pairs. Identify elements of sets. Locate ordered pairs in the Cartesian Plane. Understand how to make an ordered pair from a set.
Ordered-Pair Numbers: Functions	Determine if a relation is a function
Ordered-Pair Numbers: Rules of Correspondence	Distinguish between linear and quadratic functions. Write equations for linear and quadratic functions.
Algebra of Functions: Notation	Recognize function notation. Utilize function notation to solve for dependent variable values.
Algebra of Functions: Arithmetic	Apply arithmetic operations to equal functions. Identify equal functions.
Algebra of Functions: Composition	Combine functions via composition. Distinguish between zero, constant and identity functions. Define function composition.
Algebra of Functions: Inverse	Find the inverse of a function. Determine whether or not the inverse of a function is a function.

Pre-calculus Lesson Objectives

Unit 2: FUNCTIONS	
Assignment	**Objectives**
Linear Functions: Graphs	Identify polynomial functions. Solve linear polynomial functions.
Linear Functions: Equations	Solve linear polynomial functions. Identify polynomial functions.
2nd-Degree Functions: Solutions	Recognize that second degree polynomial graphs are parabolas. Solve second degree polynomials using factoring and the quadratic equation.
Relationships Between Zeros and Coefficients	Determine the relationships between the roots of quadratic equations. Find the discriminant. Relate how a quadratic equation can define the shape and location of parabolic curves.
Quadratic Inequalities	Solve for the roots of quadratic inequalities. Use the roots of quadratic inequalities to identify their graphs.
Polynomial Functions	Solve polynomial functions using the remainder theorem and the factor theorem. Understand how to use synthetic division.
Nth-Degree Equations	Identify upper and lower limits of Nth degree polynomials. Identify factors of Nth degree polynomials.
Greatest Integer Function	Identify greatest integer functions. Solve greatest integer functions by graphing.
Exponential Function	Identify and graph functions that include the Euler constant. Identify and graph exponential functions.
Logarithmic Function	Explain the relationship between inverse and exponential functions. Graph inverse functions.
Function Combinations	Combine functions utilizing addition.

Pre-calculus Lesson Objectives

Unit 3: TRIGONOMETRIC FUNCTIONS	
Assignment	**Objectives**
Definition of the Trigonometric Functions	Determine which quadrant trigonometric functions are located within. Identify the trigonometric functions. Solve for components of trigonometric functions.
Evaluation of Functions	Identify the quadrant in which theta is located.
Angle Location	Identify positive and negative angles in standard position . Determine the quadrant for standard position angles.
Reduction Formulas	Reduce angles using reductions formulas. Identify acute, right and obtuse angles.
Quadrantal Angles	Determine the values of trigonometric functions at reduced angles. Determine the values of trigonometric functions at quadrantal angles.
Special Angles	Understand where the values for trigonometric functions originate. Calculate the values of trigonometric functions at special angles.
Radian Measure	Understand how radians relate to degrees. Convert between radians and degrees.

Pre-calculus Lesson Objectives

Unit 4: CIRCULAR FUNCTIONS AND THEIR GRAPHS	
Assignment	**Objectives**
Circular Functions	Identify unit circles. Understand how the unit circle can be used to solve for components of trigonometric functions. Describe movement around the unit circle.
Circular Functions of Special Angles	Use reduction formulas for radian angles. Evaluate combine trigonometric functions. Convert between degrees and radians.
Graphs of Sin and Cos	Identify graphs of sine and cosine functions.
Other Graphs	Identify graphs of the tangent, cotangent, secant and cosecant functions.
Applications	Identify positive and negative angles in standard position . Determine the quadrant for standard position angles.
Amplitude of Circular Functions	Describe amplitude. Calculate amplitude for graphed trigonometric functions.
Period of Circular Functions	Determine the period of trigonometric functions.
Phase Shift of Circular Functions	Calculate phase shift for graphed trigonometric functions. Define phase shift.

Pre-calculus Lesson Objectives

Unit 5: IDENTITIES AND FUNCTIONS OF MULTIPLE ANGLES	
Assignment	**Objectives**
Reciprocal Relations	Reduce trigonometric expressions. Identify reciprocal trigonometric identities.
Pythagorean Relations	Simplify trigonometric expressions utilizing trigonometric identities. Verify trigonometric identities .
Quotient Relations	Verify trigonometric identities . Simplify trigonometric expressions utilizing trigonometric identities.
Trigonometric Identities	Identify trigonometric identities. Simplify trigonometric expressions.
Cosine of the Sum of Two Angles	Derive cosine identities. Utilize cosine identities to simplify trigonometric expressions.
Additional Sum and Difference Formulas	Simplify expressions for adding and subtracting angles relative to the sine and tangent functions
Double- and Half-Angle Formulas	Simplify trigonometric expressions using double and half-angle formulas Derive double and half-angle formulas for cosine, sine and tangent functions
Identities	Combine the identities and angle formulas learned in this unit to prove trigonometric relationships
Trigonometric Equations	Solve basic trigonometric equations

Unit 6: SEMESTER REVIEW AND EXAM	
Assignment	**Objectives**
Review	Review and reinforce Pre-calculus concepts from Units 1–5 in preparation for the semester exam.

Pre-calculus Lesson Objectives

Unit 7: APPLICATION OF TRIGONOMETRIC FUNCTIONS	
Assignment	**Objectives**
Trigonometric Functions of Any Angle	Review basic trigonometric functions. Solve trigonometric functions.
More Trigonometric Functions of Any Angle	Combine known angles and distances to solve for right triangle unknowns. Review properties of right triangles. Develop a procedure for solving right triangle problems.
Applied Problems	Solve applied resultant problems using trigonometric functions. Relate scalars, vectors and resultants. Relate forces and resultants.
Law of Cosines	Apply the Law of Cosines to find distances and angles in oblique triangles . Recognize the Law of Cosines.
Law of Sines	Find lengths and angles using the Law of Sines. Relate the Law of Sines. Apply the Law of Sines.
More Applications	Solve trigonometric problems that involve real situations
Inclined Plane Application	Combine trigonometric functions and vectors to solve incline plane problems
Navigation Application	Solve navigation problems Define and utilize navigational terms to solve navigation problems

Pre-calculus Lesson Objectives

Unit 8: INVERSE TRIGONOMETRIC FUNCTIONS AND POLAR COORDINATES	
Assignment	**Objectives**
The Inverse Sine Function	Define the inverse of a function Solve for arcsin Explain how arcsin functions and square root functions are related
The Inverse Cosine Function	Solve for unknowns using the arccos function Understand when the arccos function is a function
The Inverse Tangent Function	Solve for unknowns using the inverse of tangent functions Recognize when the inverse of tangent is a function Simplify trigonometric expressions
Other Inverse Functions	Solve inverse trigonometric functions Recognize the equations and valid ranges for inverse trigonometric functions
Graphs of Inverse Functions	Recognize the graphs and valid domains and ranges for inverse trigonometric functions Evaluate trigonometric equations
Graphing Polar Coordinates	Locate ordered pairs in polar coordinates
Converting Coordinates	Understand the relationship between Cartesian and polar coordinates Convert between Cartesian coordinates and polar coordinates
Converting Cartesian Equations to Polar Equations	Convert equations from Cartesian to polar coordinates
Converting Polar Equations to Cartesian Equations	Convert equations from polar coordinates to Cartesian coordinates
Graphing Polar Equations	Graph equations on the polar graph
Project: De Moivre's Theorem	Apply DeMoiver's Theorem to write polar coordinates in the complex plane Identify DeMoiver's Theorem

Pre-calculus Lesson Objectives

Unit 9: QUADRATIC EQUATIONS	
Assignment	**Objectives**
The Circle	Distinguish between circles, hyperbolas, ellipses and parabolas Relate equations of circles and to their corresponding graphs
The Circle Continued	Compare the standard and general forms of circle equations Relate equations of circles and to their corresponding graphs
Equation from Three Points	Find the equation of a circle that passes through three given points Relate how three points can define a circle
Equation from Three Points Applied	Use basic algebra to determine a circle's midpoint, center and radius Find circle equations based on given variables of a circle Use basic algebra to determine a circle's proximity to lines
The Ellipse	Solve ellipse equations Identify the properties of an ellipse
The Ellipse: Standard Form	Find properties of ellipses that are not centered at the origin
The Ellipse: General Form	Find the properties of ellipses using general equations Convert between standard and general elliptical equations
The Ellipse Applied	Evaluate properties of ellipses in practical application problems
The Parabola	Identify properties of parabolas Use standard parabolic equations to find properties of parabolas
The Parabola Continued	Identify properties of parabolas not centered at the origin
The Parabola: Standard Form	Write equations in standard parabolic form Analyze standard parabolic equations
The Parabola Applied	Apply parabolic equations to real situations Write general and standard parabolic equations based on a set of givens
The Hyperbola	Identify properties of hyperbolas Recognize hyperbolas
Translation	Translate points and sections on graphs
Translation of Equations	Understand why equations can be translated Translate equations to pass through a given point
Rotation	Understand why points can be rotated on graphs Calculate point rotation
Rotation of Equations	Rotate equations Simplify rotated trigonometric equations

Pre-calculus Lesson Objectives

Unit 10: PROBABILITY	
Assignment	**Objectives**
Definitions, Sample Spaces, and Probability	Identify probability, sample space and equally likely events Calculate the sample space of an event Calculate the probability of an event
Addition of Probabilities	Apply probability addition to real situations Understand how Wenn diagrams relate to probability Combine probabilities by addition
Multiplication of Probabilities	Combine probabilities by multiplication Distinguish between mutually exclusive, independent and dependent events
Definitions	Combine probabilities including multiple conditions Distinguish between combination and permutation
Permutation of N Things: Different	Calculate permutations involving distinct (n) different things
Permutation of N Things: Not All Different	Calculate permutations in which some of the items are the same things
Circular Permutations	Calculate circular permutations
Combinations	Calculate combinations with one variable Combine combinations Distinguish between permutations and combinations

Pre-calculus Lesson Objectives

Unit 11: CALCULUS AND REVIEW	
Assignment	**Objectives**
Summation	Understand summation notation Calculate basic and combined summations
Proofs by Mathematical Induction	Apply mathematical induction Identify the logic behind mathematical induction
Functional Notation	Recognize and utilize function notation Solve functions involving numbers and conditions
Difference Quotient	Calculate difference quotients Identify the difference quotient
Limits	Evaluate limits Understand limit notation Recognize the limit theorems
Slope of a Curve	Find the slope of curves Understand why limits are used to find the slope of curves
Angle Between Curves	Calculate the angle between two curves

Unit 12: SEMESTER REVIEW AND EXAM	
Assignment	**Objectives**
Review	Review and reinforce pre-calculus concepts from Units 7-11 in preparation for the second semester exam