PRESCHOOL - PRE-KINDERGARTEN
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I. NUMBERS AND OPERATIONS

A. Number Sense

The student will:

1. count orally from 1 to 10
2. touch and count objects from 1 to 5
3. recognize numerals from 1 to 5 in random order
4. recognize the difference between numbers and letters
5. equate "zero" to quantity of nothing
6. print some numerals 1 to 10

B. Addition and Subtraction

The student will:

1. guess the amount of objects before counting
2. use concrete objects to perform addition and subtraction with sums and differences up to 5

C. Multiplication and Division – No objectives

D. Properties – No objectives

E. Fractions/Decimals/Percents - No objectives

II. MEASUREMENT

A. Linear Measurement

The student will:

1. guess the relative length of objects (i.e., longer, shorter or the same) before measuring

B. Weight

The student will:

1. identify common objects as heavy or light to demonstrate understanding of the terms

C. Temperature - No objectives

D. Time/Money

The student will:

1. recognize a clock and a calendar as measures of time
2. identify time (i.e., night - day, morning - afternoon; today - tomorrow - yesterday; day - week - month)

PRESCHOOL - PRE-KINDERGARTEN
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E. Capacity

The student will:

1. identify quantity and volume (i.e., full - empty; more than - less than)
2. experiment with and manipulate dry and liquid substances

III. GEOMETRY

The student will:

1. identify the location of an object (i.e., top - bottom; over - under; outside - inside)
2. identify basic shapes (i.e., circle, square, triangle, diamond, etc.)
3. match shapes
4. sort objects by size and by weight
5. draw simple shapes without a pattern (i.e., circle, square, triangle)

IV. STATISTICS, PROBABILITY AND DATA ANALYSIS - No objectives

V. ALGEBRA

The student will:

1. recognize and duplicate simple sequential patterns (i.e., red block, blue block, red block or ABAB)
2. identify an object that does not belong in a specific group
3. separate objects to form new groups (i.e., groups of animals such as baby animals and adult animals or farm animals and zoo animals)

KINDERGARTEN
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I. NUMBERS AND OPERATIONS

Teachers should reinforce the process of estimation at each grade level. The use of a "Guessing Jar" containing an unknown number of objects is one way to do this.

Goal: For students to be able to count in a variety of ways, and to master one-to-one correspondence.

A. Number Sense

The student will:

1. Count to 100 by:

    ones, fives, tens

2. count backwards from 10

3. demonstrate one-to-one correspondence for numbers to 10

4. recognize the number of objects in a small group without counting

5. create a group of a given number of objects

6. read / write numbers 0 to 30

7. identify ordinal numbers from first to tenth

8. use language such as more than, less than, equal to compare small quantities

B. Addition and Subtraction

The student will:

1. count the number in combined groups

2. use concrete objects to solve problems with sums and differences up to 10

C. Multiplication and Division – No objectives

D. Properties – No objectives

E. Fractions/Decimals/Percents - No objectives

II. MEASUREMENT

Students should be able to estimate and measure and in both customary and metric measurements of length, weight, capacity, temperature, time, and money. As their ability to measure increases, they should be able to determine the reasonableness of their answers. Students should use appropriate labels for answers.

A. Linear Measurement

The student will:

1. identify by direct comparison the difference between longer and shorter

2. using a non-standard unit of measure determine longer and shorter (using a shoe, a hand, etc.)

3. order several objects according to length

KINDERGARTEN
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B. Weight

The student will:

1. identify by direct comparison the difference between heavier and lighter

C. Temperature

The student will:

1. identify by direct comparison the difference between hotter and colder

D. Time/Money

The student will:

1. recite the 7 days of the week and the 12 months of the year
2. identify coins (penny, nickel, dime, quarter)

III. GEOMETRY

The student will:

1. identify the difference between two- and three-dimensional shapes
2. demonstrate common language of spatial sense and show examples: inside, between, about, below, behind, near to, left, right, etc.

IV. STATISTICS, PROBABILITY AND DATA ANALYSIS

The student will:

1. sort and classify objects according to their attributes (e.g., shape, size, color)
2. collect data about themselves and their surroundings (e.g., hair color, eye color, shoe color, birthdays)
3. construct and interpret graphs, real graphs (using physical objects), pictographs from previously collected data

V. ALGEBRA

The student will:

1. sort objects and pictures by attributes
2. describe sorting rules

1ST GRADE
(Page 1 of 3)

I. NUMBERS AND OPERATIONS

Goal: To teach students the concept of addition and subtraction and their inverse relationship to each other, whole number relationships including grouping in tens and ones. Students should be exposed to the appropriate vocabulary of the math concepts. Teachers should reinforce the process of estimation at each grade level. The use of a "Guessing Jar" containing an unknown number of objects is one way to do this.

A. Number Sense

The student will:

1. read and write numbers 0 to 100
2. count by 2s to 100
3. compare sets of objects to show more than, less than, equal to using symbols
4. identify numbers that come before, after and between and represent them on a number line
5. identify place value of ones and tens
6. recognize two-digit numbers as groups of tens and ones

B. Addition and Subtraction

Goal: To demonstrate the relationship between addition and subtraction as an inverse relationship.

The student will:

1. use strategies (e.g., doubles, plus-minus-one, making 10, fact families, counting on, etc.) to generate basic facts and to demonstrate understanding of the inverse relationship between addition and subtraction
2. use objects, pictures, length-based model (e.g., connecting cubes), and number lines to illustrate addition and subtraction concepts
3. demonstrate single-digit addition and subtraction facts with automaticity (facts to 10)
4. add and subtract two-digit numbers without regrouping
5. choose the appropriate operation of addition or subtraction in word problems

C. Multiplication and Division – No objectives

D. Properties

The student will:

1. use the commutative and associative properties to add single-digit whole numbers (i.e., 2+5 = 5+2, 3+(4+1) = (3+4)+1). Use the correct vocabulary when using the property.

E. Fractions/Decimals/Percents - No objectives

1ST GRADE
(Page 2 of 3)

II. MEASUREMENT

Students should be able to estimate and measure in both customary and metric measurements of length, weight, capacity, temperature, time and money. As their ability to measure increases, they should be able to determine the reasonableness of their answers. Students should use appropriate labels for answers.

A. Linear Measurement

The student will:

1. measure length, width and height using non-standard units
2. using non-standard units make and check estimates of length
3. compare and order lengths

B. Weight

The student will:

1. measure weight using non-standard units
2. compare and order weights using non-standard units
3. select an appropriate tool for measuring weight (i.e., a balance scale versus a ruler or a cup)

C. Temperature – No objectives

D. Time/Money

The student will:

1. read and identify dates and days of the week using a calendar
2. sequence days and months
3. tell time to the hour and half-hour
4. identify the value of coins including half-dollars and dollar coins
5. add total value of mixed coins; pennies, nickels, and dimes

D. Capacity – No objectives

III. GEOMETRY

The student will:

1. compare similarities and differences between common geometric shapes
2. compose (combine) and decompose (take apart) basic shapes
3. describe characteristics of two- and three-dimensional geometric shapes to include squares, rectangles, triangles and circles

1ST GRADE

(Page 3 of 3)

IV. STATISTICS, PROBABILITY, DATA ANALYSIS

The student will:

1. use data collected to describe parts to whole

2. construct and interpret picture and bar graphs

V. ALGEBRA

The student will:

1. use concrete objects and pictures to create patterns and describe them in a variety of ways

2. use number pairs to describe another number

2ND GRADE
(Page 1 of 3)

I. NUMBERS AND OPERATIONS

Goal: For students to have fluency with multi-digit addition and subtraction as well as develop an understanding of the base-ten numeration system and place value concepts. Students should be exposed to and be able to use the appropriate vocabulary of the math concepts. Teachers should reinforce the process of estimation at each grade level. The use of a "Guessing Jar" containing an unknown number of objects is one way to do this.

A. Number Sense

The student will:

1. count in units and multiples of hundreds, tens, and ones (skip counting)
2. demonstrate understanding of place value up to and including the thousands place using expanded form
3. create equivalent representations of given numbers (such as 35 represented by 35 ones, 3 tens and 5 ones, or 2 tens and 15 ones)
4. count, read, and write numbers to 1,000
5. use a number line to round numbers to the nearest tens and hundreds
6. identify numbers as odd or even
7. compare and order numbers up to one thousand

B. Addition and Subtraction

The student will:

1. demonstrate addition and subtraction facts with fluency and automaticity (sums to 20)
2. add and subtract whole numbers of at least four digits without renaming and regrouping
3. "Select and apply appropriate methods to estimate sums and differences or calculate them mentally depending on the context and number involved" (Focal Points, p. 14).
4. add and subtract whole numbers of at least four digits, demonstrating fluency with standard algorithms (renaming and regrouping)
5. add more than two single and multi-digit numbers (numbers in a column)
6. explain why place value allows renaming and regrouping
7. add numbers with regrouping to the tens place (The focus is on the visualizing of making another group of ten, not on the algorithm procedure of lining up the numbers in place value spaces.)

C. Multiplication and Division – No objectives

D. Properties

The student will:

1. use the commutative and associative properties to add multiple-digit whole numbers
   (i.e., 12+15 = 15+12; 25+(50+19) = (25+50)+19)

2ND GRADE
(Page 2 of 3)

E. Fractions/Decimals/Percents

The student will:

1. represent familiar fractions such as 1/2, 1/3 and 1/4
2. represent familiar fractions geometrically as part of a whole

II. MEASUREMENT

Students should be able to estimate and measure in both customary and metric measurements of length, weight, capacity, temperature, time and money. As their ability to measure increases, they should be able to determine the reasonableness of their answers. Students should use appropriate labels for answers.

A. Linear Measurement

The student will:

1. use rulers and other measurement tools
2. select an appropriate tool for measuring length (i.e., a ruler, yard stick, meter stick)
3. estimate, measure, add and subtract lengths using inches, feet, and yards, centimeters, and meters
4. partition lengths into equal-sized segments

B. Weight

The student will:

1. measure weight using customary and metric units (ounces, pounds, grams)

C. Temperature

The student will:

1. read a Fahrenheit and Celsius thermometer
2. measure and record temperature using customary and metric thermometers (Fahrenheit and Celsius)

D. Time/Money

The student will:

1. identify the relationship between units of time (i.e., 24 hours/day; 7 days/week, 60 minutes/hour, 60 seconds/minute)
2. tell time and write it to the quarter hour and the minute
3. describe time as A.M. or P.M., noon or midnight
4. add similar units of time (i.e., add 3 hours + 2 hours, etc.)
5. add total value of mixed coins; pennies, nickels, dimes, quarters, half-dollars (sums less than $1), dollars coins and dollar bills

E. Capacity

The student will:

1. identify and compare measure of capacity using cups, pints, quarts and gallons

2ND GRADE
(Page 3 of 3)

III. GEOMETRY

The student will:

1. describe characteristics of three-dimensional geometric solids to include rectangles, prisms, pyramids, spheres, cylinders, and cones

2. compare and contrast the properties of two-dimensional figures (circle, triangle, rectangle, square) and three-dimensional solids (sphere, square pyramid, cone, cylinder, and cube)

3. investigate the concept of perimeter and area

4. compute the perimeter of both regular and irregular figures

5. identify the line of symmetry for various shapes (e.g., letters of the alphabet) along a line identify congruent shapes (mirror images)

IV. STATISTICS, PROBABILITY, AND DATA ANALYSIS

No objectives in this grade but students should continue use graphic skills learned in previous grades.

V. ALGEBRA

The student will:

1. create and recognize patterns using numbers

2. solve problems using patterns

3. find the missing number in an addition or subtraction problem

3RD GRADE
(Page 1 of 3)

I. NUMBERS AND OPERATIONS

Goal: For students to develop the conceptual understanding of multiplication and division. The students will also gain a conceptual understanding of fractions. Teachers should reinforce the process of estimation at each grade level. The use of a "Guessing Jar" containing an unknown number of objects is one way to do this. Students should continue to determine the reasonableness of answers.

A. Number Sense

The student will:

1. recognize, read, count, and write numbers up to and including 100,000
2. use expanded form to write numbers in numerals to 100,000
3. identify place value to 100,000
4. round numbers to 1,000
5. identify Roman Numerals to 1,000 (using I, V, X, L, C, D, and M)

B. Addition and Subtraction

The student will:

1. subtract across zeros with at least six digits numbers

C. Multiplication and Division

The student will:

1. use repeated addition to model multiplication
2. use arrays, number lines, equal groups and area models to illustrate multiplication and division concepts and facts
3. demonstrate automaticity and fluency with multiplication and division facts 0-10
4. multiply multiplicands of up to six digits by a single digit
5. relate multiplication and division as inverse operations using a variety of strategies

D. Properties

The student will:

1. use the property of one in multiplication and division
2. use the property of zero in multiplication
3. use the associative, commutative, and distributive properties for multiplication

E. Fractions/Decimals/Percents

The student will:

1. demonstrate that fractions are parts of unit wholes, parts of collections, and have locations on number lines
2. identify and write mixed numbers without simplification

3RD GRADE
(Page 2 of 3)

3. identify and write proper and improper fractions without simplification
4. use models and number lines to identify equivalent fractions
5. compare and order simple fractions with common numerators, uncommon denominators, and benchmark fractions using models

II. MEASUREMENT

Students should be able to estimate and measure in both customary and metric measurements of length, weight, capacity, temperature, time and money. As their ability to measure increases, they should be able to determine the reasonableness of their answers. Students should use appropriate labels for answers.

A. Linear measurement

The student will:

1. measure length to the nearest half unit

B. Weight – No objectives

C. Temperature - No objectives

D. Time/Money

The student will:

1. count up to ten dollars
2. make change to one dollar by counting up
3. round amounts to the nearest dollar; the nearest ten dollars
4. recognize that dollars and cents are decimals, and that money may be represented as fractions of dollars (i.e., ¼ of a dollar is a quarter)
5. write money appropriately as decimals OR with the cent sign, not both
6. calculate elapsed time using hours and minutes (i.e., from 2:15 until 3:15 is one hour)
7. convert smaller measures of time to larger (i.e., 63 minutes = 1 hour and 3 minutes; 17 days = two weeks and three days)
8. recognize expressions of time before and after the hour as being the same (10:45 is the same as a quarter to eleven)
9. use a calendar to determine a date some time (i.e., two weeks) in the future or in the past

E. Capacity

The student will:

1. measure capacity using cups, pints, quarts and gallons
2. describe the relationship of standard measurement to metric measurement (i.e., quarts are similar to liters)

3RD GRADE
(Page 3 of 3)

III. GEOMETRY

The students will:

1. describe characteristics of two-dimensional shapes (rhombus, irregular figures) and three-dimensional geometric shapes
2. compare and contrast the properties of two-dimensional (parallelograms) and three-dimensional geometric figures to include the rectangular prism and triangular pyramid
3. use tiles to measure area of various rectangles
4. identify parallel, perpendicular, and intersecting lines and rays. Define horizontal and vertical.
5. identify acute, obtuse, right and straight angles

IV. STATISTICS, PROBABILITY, AND DATA ANALYSIS

The student will:

1. construct and analyze frequency tables, bar graphs, picture graphs and line plots and use them to solve problems
2. use spinners, coins and dice to predict outcomes and describe the concept of "chance" in terms of likely, unlikely, or equally likely

V. ALGEBRA

The student will:

1. predict the next number in a pattern
2. name the previous number in a pattern

4TH GRADE
(Page 1 of 3)

I. NUMBERS AND OPERATIONS

Goal: For students to develop fluency in multiplication and division. The students will extend their understanding of fractions and fractional parts. "Students will develop an understanding of decimals including the connections between fractions and decimals" Focal Points. Teachers should reinforce the process of estimation at each grade level. The use of a "Guessing Jar" containing an unknown number of objects is one way to do this. Students should continue to determine the reasonableness of answers.

A. Number Sense

The student will:

1. count, read, write, order, compare, estimate and round numbers to 1 million
2. identify, place value and read and write numbers in word form from millionths to millions (i.e., Four thousand six hundred thirty-four and seven hundredths – 4,634.07)
3. define prime and composite numbers
4. identify prime numbers to 20
5. use factorization to express whole numbers as products of prime factors

B. Addition and Subtraction – No objectives

Students should continue to practice skills.

C. Multiplication and Division

The student will:

1. multiply by two digit numbers and three digit numbers
2. demonstrate automaticity and fluency with multiplication and division facts (11 - 12)
3. divide two- and three-digit dividends by one digit
4. show a remainder when dividing by one digit

D. Properties – No objectives

Students should continue to use and explore the property of zero, the property of one, and the associative, commutative and distributive properties and use the correct vocabulary associated with them.

E. Fractions/Decimals/Percents

The student will:

1. change improper fractions to mixed numbers
2. change mixed numbers to improper fractions
3. simplify fractions to lowest terms
4. read, write, and order fractions
5. read, write, and order mixed numbers
6. generate many fractions for the same value

4TH GRADE
(Page 2 of 3)

7. read, write and compare decimals as an extension of the base-ten system

8. understand decimals as a part of the whole

9. locate decimals on a number line

10. compare and order whole numbers, fractions and decimals

11. write decimals as equivalent fractions to the thousandths place

II. MEASUREMENT

Students should be able to estimate and measure and in both customary and metric measurements of length, weight, capacity, temperature and time and money. As their ability to measure increases, they should be able to determine the reasonableness of their answers. Students should use appropriate labels for answers.

A. Linear measurement

The student will:

1. measure length to the nearest 1/4, and 1/8 of an inch or to nearest millimeter

B. Weight – No objectives

C. Temperature – No objectives

D. Time / Money

The student will:

1. count to one hundred dollars

2. make change to ten dollars

3. add and subtract elapsed time with regrouping (minutes greater than one hour becomes converted to an hour; days more than seven become a week)

E. Capacity

The student will:

1. measure capacity using fluid ounces, cups, pints, quarts, gallons and liters

III. GEOMETRY

The student will:

1. compare and contrast the characteristics and properties of two-dimensional shapes (regular hexagon, pentagon, etc.) and their corresponding three-dimensional solids

2. identify equilateral, isosceles, scalene and right triangles

3. measure volume of rectangular prisms using cubes

4. measure surface area with tiles

5. derive the formula for area of a rectangle

6. classify two-dimensional figures - i.e., squares – as subsets of rectangles, and rectangles as subsets of parallelograms

4TH GRADE
(Page 3 of 3)

IV. STATISTICS, PROBABILITY AND DATA ANALYSIS

Students continue to use the skills and tools from Grade 3.

The student will:

1. apply place value to use stem/leaf plots
2. model situations using experiments to determine probability and predict results
3. represent probability as a fraction

V. ALGEBRA

The student will:

1. find the missing number in a pattern
2. identify missing operational signs in equations

5ᵀᴴ GRADE

(Page 1 of 3)

I. NUMBERS AND OPERATIONS

Goal: For students to develop fluency with division of whole numbers, with addition and subtraction of fractions, and addition and subtraction of decimals. The students will extend their understanding of fractions and fractional parts. "Students will develop an understanding of decimals including the connections between fractions and decimals" Focal Points. Teachers should reinforce the process of estimation at each grade level. The use of a "Guessing Jar" containing an unknown number of objects is one way to do this. Students should continue to determine the reasonableness of answers.

A. Number Sense – No objectives

B. Addition and Subtraction – No objectives

Students should continue to practice skills.

C. Multiplication and Division

The student will:

1. write remainders as fractions
2. divide when zeros are present in the dividend
3. divide multi-digit dividends by multi-digit divisors
4. recite and use divisibility rules for 2, 3, 4, 5, 6, 9, and 10

D. Properties – No objectives.

Students should continue to use and explore the property of zero, the property of one, and the associative, commutative and distributive properties.

E. Fractions/Decimals/Percents

The student will:

1. find the least common multiple and the greatest common factor
2. find the least common denominator for two or more fractions
3. add and subtract fractions with like and unlike denominators
4. add and subtract mixed numbers with like and unlike denominators
5. change terminating decimals to fractions and fractions to decimals
6. add and subtract decimals
7. round numbers less than 1 to tenths, hundredths, and thousandths
8. multiply and divide decimals (with both whole numbers and decimals in the divisor)

5TH GRADE
(Page 2 of 3)

II. MEASUREMENT

Students should be able to estimate and measure and in both customary and metric measurements of length, weight, capacity, temperature and time and money. As their ability to measure increases, they should be able to determine the reasonableness of their answers. Students should use appropriate labels for answers.

A. Linear Measurement

The student will:

1. convert within customary units and metric units of measurement using multiplication and division (How many inches are in two feet? How many cm are in 36 meters? What fractional part of a foot is 3 inches?)

B. Weight

The student will:

1. convert within the same system of weight using multiplication and division (How many ounces are in two pounds? How many grams are in 32 Kg? What fractional part of a pound is 4 ounces?)

C. Temperature – No objectives

D. Time/Money

The student will:

1. add, subtract, multiply and divide money amounts
2. make change to values greater than ten dollars

E. Capacity

The student will:

1. convert measures within the same system using multiplication and division (How many cups are in three pints? How many milliliters are in 10 liters?)

III. GEOMETRY

The student will:

1. identify and use formulas for area and perimeter for rectangles and triangles
2. identify three-dimensional figures including faces, vertices, edges of cubes and pyramids
3. identify the effects of combining basic shapes (i.e., the area and perimeter of a square and an adjacent triangle)
4. draw a pattern for a three-dimensional figure
5. find the surface area and volume of three-dimensional shapes (rectangular prisms)
6. derive the formula for the area of a triangle and shapes made from triangles

5TH GRADE
(Page 3 of 3)

IV. STATISTICS, PROBABILITY AND DATA ANALYSIS

Goal: The student will display and interpret data and predict outcomes

The student will:

1. construct, interpret and analyze bar graphs, line graphs, and pictographs using whole numbers
2. compare data and predict outcomes for the data
3. create a scatter plot using ordered pairs to graph points on a coordinate grid
4. compute the mean, median, mode and range of data sets

V. ALGEBRA

The student will:

1. find the missing numbers in a sequence
2. identify the order of operations for simplifying mathematical equations
3. simplify expressions using order of operations

6TH GRADE
(Page 1 of 2)

I. NUMBERS AND OPERATIONS

A. Number Sense

The student will:

1. define and demonstrate exponential notation
2. write large and small numbers using scientific notation
3. identify the components of the real number system (i.e., natural, whole, integers, rational, and irrational)
4. read, write and plot real numbers on a number line
5. demonstrate an understanding of the relationship between the absolute value of a rational number and distance on a number line. Use the symbol for absolute value.

B. Addition and Subtraction

The student will:

1. add and subtract integers

C. Multiplication and Division

The student will:

1. use multiplication and division of fractions and decimals specifically to use, understand, and interpret rates and ratios

D. Properties

The student will:

1. identify and use the inverse property of multiplication (i.e., ½ * 2 = 1)
2. use the commutative, associative and distributive properties to demonstrate that expressions in different forms can be equivalent

E. Fractions / Decimals / Percents

The student will:

1. multiply fractions and mixed numbers
2. identify and use reciprocal numbers
3. divide fractions and mixed numbers
4. convert between fractions, decimals and percent
5. calculate the percent of a number

6TH GRADE
(Page 2 of 2)

II. MEASUREMENT – NO OBJECTIVES

III. GEOMETRY

Goal: Students will identify, define and calculate area, perimeter, volume and surface area of two-dimensional and three-dimensional figures using the proper formulas and tools, in real-world and mathematical problems.

The student will:

1. identify properties of supplementary and complementary angles
2. define properties of triangles as a figure whose interior angles add up to 180 degrees
3. define basic transformations to include slide, flip and rotate
4. use tessellations to rotate and reflect geometric figures
5. use geometric tools (compass, protractor, straight edge) to construct and measure angles, triangles, squares, rectangles, and circles
6. define similar and congruent figures and their corresponding angles
7. identify properties of vertical, adjacent, and straight angles
8. calculate the area of squares, triangles, rectangles, and parallelograms, and explain why the formulas are valid
9. find volume and surface area of rectangular and triangular prisms
10. solve area and volume problems where the area or volume is given, but one length is missing

IV. STATISTICS, PROBABILITY AND DATA ANALYSIS

Goal: represent probabilities using whole numbers, fractions, decimals, and percents

The student will:

1. construct, interpret and analyze bar graphs, line graphs, pictographs and circle graphs using fractions, decimals, and percents
2. calculate probabilities and make predictions using real-world and mathematical problems with fractions, decimals, and percents

V. ALGEBRA

The student will:

1. write mathematical expressions and equations that correspond to given situations
2. evaluate expressions by plugging in for variables
3. use expressions and formulas to solve problems
4. understand and use variables appropriately to represent unknown values
5. prove that the solutions to an equation are those values that make the equations true
6. solve simple one-step equations
7. construct and analyze tables and use equations to describe simple relationships (such as $3x = y$)
8. use sequences and patterns to find an equation
9. write and solve proportions

7TH GRADE
(Page 1 of 2)

I. NUMBERS AND OPERATIONS

A. Number Sense

The student will:

1. identify squares of numbers from 1- 20
2. define a square root as the inverse operation to squaring a number
3. find the square roots using tables, estimation, and calculators

B. Addition and subtraction – No objectives

Students should continue to practice skills

C. Multiplication and Division

The student will:

1. solve multiplication and division problems using positive and negative numbers
2. use scientific notation to multiply and divide large and small numbers (recognize and use positive and negative exponents)

D. Properties – No objectives

Students should continue to practice skills.

E. Fractions / Decimals/ Percents

The student will:

1. develop meaning for percent greater than 100% and smaller than 1%
2. solve a wide variety of percent problems including problems involving discounts, simple interest, taxes, tips, and percent increase / decrease
3. compute addition, subtraction, multiplication and division of rational numbers
4. divide fractions to solving equations of the form ax = b where a and b are fractions
5. use division to express any fraction as a decimal including infinite (or non-terminating) decimals

II. MEASUREMENT – No objectives

III. GEOMETRY

The student will:

1. identify and construct basic elements of geometric figures using geometric tools (compass, protractor, straight edge) - altitudes, midpoints, diagonals, perpendicular bisectors, central angles, radii, diameters, and chords
2. calculate area and circumference of circles
3. compute the perimeter of regular and irregular figures
4. compute the area of selected complex figures

7TH GRADE
(Page 2 of 2)

5. compute the volumes and surface areas of regular pyramids and cylinders using a variety of methods

6. calculate the interior angles of various regular polygons

7. use deductive reasoning to determine the measure of an angles where the measure of one or more other angles in a figure are given

8. define and apply the Pythagorean Theorem in a variety of situations

IV. STATISTICS, PROBABILITY AND DATA ANALYSIS

The student will:

1. choose the most appropriate way to display and interpret a variety of data sets such as bar graphs, line graphs, pictographs, histograms and circle graphs

2. use mean, median, mode and range to draw conclusions about data and to make predictions

3. recognize and be able to give examples of how the display of data sets can be manipulated to tell different stories

4. calculate and analyze probabilities of multiple events (dependent and independent) using a variety of methods such as organized lists, tree diagrams, and area models. Record results a fractions, decimals and percents

5. recognize probability of multiple events as either multiplication or addition problems

6. continue to use probabilities and to make predictions using real-world and mathematical problems with fractions, decimals, and percents

7. organize and interpret in a scatter plot; draw a trend line through the data to make predictions

8. define and accurately use the terms positive correlation, negative correlation, and no correlation

V. ALGEBRA

The student will:

1. solve problems about similar objects by using the scale factors that relate corresponding lengths

2. use proportions to solve problems about similar objects by using the knowledge that the relationships of lengths within an object are preserved in similar objects

3. use and understand proportional relationships to solve a variety of problems

4. solve linear equations with one variable using inverse operations

5. use linear equations with one variable to solve problems

6. use the properties of equality to express an equation in a new way, and then demonstrate that the solutions obtained for the new equation also serve the original equation

7. use linear graphing to represent and solve problems, including problems about the intersection point of two lines

8. write and evaluate an algebraic expression for a given situation using up to three variables

9. recognize irrational numbers