A Curriculum Guide for
Fillmore Central Public Schools
Grades K-12

Mathematics

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Fillmore Central Public Schools
Mathematics Curriculum Grades K-12

Key for coding the mathematics curriculum:

Grade Level/Courses – Strand – Number of Objectives

Examples: 4 – N – 2
             3 – D – 1
             AL1 - 6

Grade levels or Courses:
K/0=Kindergarten
1=First Grade
2=Second Grade
3=Third Grade
4=Fourth Grade
5=Fifth Grade
6=Sixth Grade
7=Seventh Grade
8=Eighth Grade
AL1=Algebra I
STM=Standards Math
GEO=Geometry
AL2=Algebra II
PC=Pre Calculus
CAL=Calculus

Strands:
N = Number
G = Geometry
D = Data
A=Algebraic

Objective:
TLW=The learner will
Objective - defines the intended learner outcomes of what students need to know and do at the different grade levels.

Standards:
The Nebraska Math Standard number(s) is identified at the end of each objective in parenthesis. Example: K-N-6 TLW write the numerals 0-20. (0.1.1.f)

Math Curriculum

Kindergarten

K-N-1   TLW count forward from any given number to 100 by 1's. (0.1.1.a)

K-N-2   TLW count by 10's to 100 starting at any decade number. (0.1.1.a)

K-N-3   TLW count backward from 10 to 0 by 1s.

K-N-4   TLW count objects to demonstrate one-to-one correspondence to twenty when arranged in a variety of ways & represent the sets with a written numeral 0-20. (0.1.1.b, 0.1.1.c, 0.1.1.d, 0.1.1.e, 0.1.1.f)

K-N-5   TLW count out objects given a number from 1-20. (0.1.1.e)

K-N-6   TLW write the numerals 0-20. (0.1.1.f)

K-N-7   TLW compose and decompose numbers from 11-19 into ten ones and some more ones by a drawing, model or equation. (10+4=14, 14=10+4) (0.1.1.g)

K-N-8   TLW compare the number of objects in two groups as greater than, less than or equal to. (0.1.1.h)

K-N-9   TLW compare the value of two written numerals between 1 and 10. (0.1.1.i)

K-N-10   TLW fluently (automatic recall) add and subtract within 5. (0.1.2.a)

K-N-11   TLW sequence objects using ordinal number (first through fifth).

K-N-12   TLW make estimations of numbers to 20 and compare to actual results.

K-A-1   TLW decompose numbers less than or equal to 10 into pairs in more than one way, showing each decomposition with a model, drawing or equation. (7=4+3, 7=1+6) (0.2.1.a)

K-A-2   TLW find the number that makes 10 when added to the given number (1-9), showing the answer with a model, drawing or equation. (0.2.1.b)

K-A-3   TLW solve real-world problems that involve addition and subtraction within 10 using objects or drawings. (0.2.3.a)

K-A-4	TLW form and continue repeated simple patterns with a variety of manipulatives (ABABAB) and identify patterns in their environment.
K-G-1	TLW describe real-world objects using names of shapes, regardless of their orientation or size (circle, square, triangle, rectangle, cube, cone, sphere, and cylinder). (0.3.1.a)
K-G-2	TLW identify shapes as two-dimensional ("flat") or three-dimensional ("solid"). (0.3.1.b)
K-G-3	TLW compare/contrast two- and three-dimensional shapes with different sizes and orientations (describe attributes). (0.3.1.c)
K-G-4	TLW model shapes found in real-life by building shapes from materials and drawing shapes. (0.3.1.d)
K-G-5	TLW combine simple shapes to compose larger shapes. (0.3.1.e)
K-G-6	TLW describe the relative positions of objects (above, below, beside, in front of, behind, next to, between). (0.3.2.a)
K-G-7	TLW measure and compare real-world objects using length and weight. (0.3.3.a, 0.3.3.b)
K-G-8	TLW explain that the calendar measures time by days and sequence the days of the week.
K-G-9	TLW identify the standard clock face, hour hand, minute hand, and its numbers and tell time to the hour.
K-G-10	TLW identify the name and amount of a penny, nickel, dime, and quarter.
K-D-1	TLW collect and organize information to create classroom graphs to compare more, less, and equal. (0.4.1)
K-D-2	TLW identify, sort and classify objects by size, shape, color and other attributes and explain reasoning used. (0.4.2.a)
K-D-3	TLW use activities and solve problems developed from other cultures to at least include: Hispanic, Native American, Asian American, and African American.

Math Curriculum

Grade 1

1-N-1   TLW count by 1's, 2's, 5's, and 10's to 120 starting at any given number. (1.1.1a)

1-N-2   TLW read and write numbers within the range of 0-120. (1.1.1b)

1-N-3   TLW write numbers to match a representation of a given set of objects for numbers up to 120. (1.1.1c)

1-N-4   TLW-demonstrate that each digit of a two-digit number represents amounts of tens and ones, knowing 10 can be considered as one unit made of ten ones which is called a "ten" and any two-digit number can be composed of some tens and some ones (e.g., 19 is one ten and nine ones, 83 is eight tens and three ones) can be recorded as an equation (e.g, 19= 10+9). (1.1.1d)

1-N-5   TLW demonstrate that decade numbers represent a number of tens and 0 ones (e.g., 50= 5 tens and 0 ones). (1.1.1e)

1-N-6   TLW compare two two digit numbers by using symbols <, =, > and justify the comparison based on the number of tens and ones. (1.1.f)

1-N-7   TLW compare and order numbers to 120. (<, >, and =).

1-N-8   TLW identify and use symbols for addition, subtraction, and equal to.

1-N-9   TLW fluently (i.e., automatic recall based on understanding) add and subtract within 10. (1.1.2a)

1-N-10   TLW add and subtract within 20, using a variety of strategies (e.g., count on to make a ten). (1.1.2b)

1-N-11   TLW find the difference between two numbers that are multiples of 10, ranging from 10-90 using concrete models, drawings or strategies, and write the corresponding equation (e.g., 90-70=20). (1.1.2c)

1-N-12   TLW mentally find 10 more or 10 less than a two-digit number without having to count and explain the reasoning used (e.g., 33 is 10 less than 43). (1.1.2d)

1-N-13   TLW add within 100, which may include adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of ten using concrete models, drawings, and strategies which reflect understanding of place value. (1.1.2e)

1-N-14   TLW identify ordinals from first to tenth.

1-N-15	TLW identify the position of a whole number on a horizontal number line.
1-N-16	TLW identify odd and even numbers through 20.
1-A-1	TLW use the meaning of the equal sign to determine if equations are true and give examples of equations that are true (e.g., 4 = 4, 6 = 7-1, 6+3 = 3+6, and 7+2 = 5+4). (1.2.1a)
1-A-2	TLW use the relationship of addition and subtraction to solve subtraction problems (e.g., find 12-9= ___, using the addition fact 9+3=12). (1.2.1b)
1-A-3	TLW find numerical patterns to make connections between counting and addition and subtraction (e.g., adding two is the same as counting on two.) (1.2.1c)
1-A-4	TLW determine the unknown whole number in an addition or subtraction equation (e.g., 7 + ? =13). (1.2.1d)
1-A-5	TLW decompose numbers and use the commutative and associative properties of addition to develop addition and subtraction strategies including (making 10's and counting on from the larger number) to add and subtract basic facts within 20(e.g., decomposing to make 10, 7+5=7+3+2=10+2=12; using the commutative property to count on 2+6=6+2; and using the associative property to make 10, 5+3+7=5+(3+7)=5+10). (1.2.2a)
1-A-6	TLW solve real-world problems involving addition and subtraction within 20 in situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all parts of the addition or subtraction problem (e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem). (1.2.3a)
1-A-7	TLW solve real-world problems that include addition of three whole numbers whose sum is less than or equal to 20 by using objects, drawings, and equations with a symbol to represent the unknown number in the problem. (1.2.3b)
1-A-8	TLW create a real-world problem to represent a given equation involving addition and subtraction within 20. (1.2.3c)
1-A-9	TLW make estimations of numbers to 100 and compare actual results.
1-A-10	TLW create and label patterns as AB, ABB, and ABC.

1-G-1   TLW draw, compare, and describe different two-dimensional geometric shapes. (1.3.1a)

1-G-2   TLW identify and represent wholes into equal parts for fractions on one-half and one-fourth using the terms "halves", "fourths", and "quarters", and use the phrases "half of", "fourths of", and "quarter of". (1.3.1b)

1-G-3   TLW use two-dimensional shapes (e.g., rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) and three-dimensional shapes (e.g., cubes, rectangular prisms, cones, and cylinders) to compose and describe new shapes. (1.3.1c)

1-G-4   TLW count and find the value of groups of pennies, groups of dimes. and groups of nickels. relating to tens and ones, and solve real-world problems involving dimes and pennies, using ¢ symbol appropriately (e.g., if you have four dimes and two pennies, how many cents do you have? (1.3.3a)

1-G-5   TLW tell time by the hour and by the half-hour using analog and digital clocks. (1.3.3b).

1-G-6   TLW measure objects by using a shorter object end-to-end and know that the length of the object is the amount of same-size objects that span it lined up end-   to-end. (Ex: toothpicks, blocks, etc.). (1.3.3c)

1-G-7   TLW order three objects by directly comparing their lengths, or indirectly by using a third object. (1.3.3d)

1-G-8   TLW measure weight using balance scales with objects (heavier, lighter, equal).

1-G-9   TLW measure with a ruler to the nearest inch.

1-G-10   TLW demonstrate that there are 12 inches in a foot.

1-G-11   TLW sequence the months of the year.

1-G-12   TLW students will compare relative position (left/right, near/far, around/through).

1-G-13   TLW identify one line of symmetry in two-dimensional shapes (circle, square, rectangle, triangle.)

1-D-1   TLW read and interpret picture graphs and bar graphs. (1.4.1a, 1.4.2a)

1-D-2   TLW organize and represent a data set with up to three categories using a picture graph. (1.4.1a)

1-D-3	TLW ask and answer questions about the total number of data points, how many in each category, and compare categories by identifying how many more or less are in a particular category using a picture graph. (1.4.2a)
1-D-4	TLW use activities and solve problems developed from other cultures to at least include: Hispanic, Native American, Asian American, and African American.

Math Curriculum

Grade 2

2-N-1	TLW compare numbers up to 1000. (2.1.1.a)
2-N-2	TLW read, write, and explain standard numbers through 1,000. (2.1.1.b)
2-N-3	TLW order and compare whole numbers through the hundreds place using the signs for greater than, less than, and equal to in number sentences. (2.1.1.e)
2-N-4	TLW write numbers through 1000 in expanded form. (2.1.1.b,c)
2-N-5	TLW add and subtract amounts of money up to $1.00. (2.1.2.d)
2-N-6	TLW write the sums of the addition facts through twenty. (2.1.2.a)
2-N-7	TLW verbally recall from memory the sums of the addition facts through twenty. (2.1.2.a)
2-N-8	TLW write the differences of the subtraction facts through twenty. (2.1.2.a)
2-N-9	TLW verbally recall from memory the differences of the subtraction facts through 20. (2.1.2.a)
2-N-10	TLW find the sum of three addends through the sum of twenty. (2.1.2.a)
2-N-11	TLW add two-digit numbers with and without regrouping. (2.1.2.b)
2-N-12	TLW add and subtract three-digit numbers with and without regrouping. (2.1.2.e)
2-N-13	TLW mentally add or subtract 10 or 100 to/from a given number 100-900. (2.1.2.c)

2-N-14	TLW use addition to find the total number of objects arranged in an array no larger that 5x5 and write an equation to express the total (e.g. 3+3+3=9). (2.1.2.f)
2-N-15	TLW identify ordinals to 19.
2-N-16	TLW demonstrate simple concepts of positive and negative numbers, such as using a thermometer for temperature.
2-N-17	TLW estimate to determine reasonableness of answers. (2.1.4)
2-A-1	TLW identify odd and even numbers through 100. (2.2.1.a)
2-A-2	TLW relate addition or subtraction by completing fact families for sums through 18.(1.2.1.b)
2-A-3	TLW demonstrate the value of a given number in a variety of ways. (Example: 18=9+9, 19-1). (1.2.1)
2-A-4	TLW write and solve story problems using problem solving steps (explore, plan, solve, examine). (2.2.3a.b)
2-A-5	TLW solve one-step story problems that require the student to choose the correct operation. (2.2.3.a)
2-A-6	TLW use activities and solve problems developed from other cultures to at least include: Hispanic, Native American, Asian American, and African American. (2.2.3)
2-A-7	TLW use boxes to stand for a missing number in a number sentence. (1.2.1)
2-A-8	TLW identify, describe, and extend patterns, using concrete materials and fact tables. (1.2.1.c)
2-A-9	TLW identify, describe, and extend patterns using addition, color, shape, and numbers. (2.3.1)
2-G-1	TLW write money in decimal notation. (2.3.3.a)
2-G-2	TLW identify fractional parts of a whole (halves, thirds, fourths). (2.3.1)
2-G-3	TLW count and find the value of quarters, dimes, nickels, and pennies. (1.3.3.a)
2-G-4	TLW demonstrate a specified amount (up to $2), by selecting the least

amount of coins. (1.3.3.a)

2-G-5	TLW estimate, add, and subtract decimals (amounts of money) and determine when a calculator is the appropriate tool to be used. (2.3.3.a)
2-G-6	TLW measure and read temperature accurately within 2 degrees using Celsius and Fahrenheit. (2.3.3)
2-G-7	TLW select and use the appropriate units of measurement – inches, feet, and centimeters. (2.3.3.c)
2-G-8	TLW estimate and measure to the nearest centimeter. (2.3.3.e)
2-G-9	TLW estimate and measure to the nearest inch and foot using a ruler and yard stick. (2.3.3.e)
2-G-10	TLW recognize cups, pints, quarts, and gallons. (2.2.5)
2-G-11	TLW tell time to five-minute intervals. (2.3.3.b)
2-G-12	TLW calculate and define the perimeter of a 3 or 4 sided figure. (3.3.3.a)
2-G-13	TLW identify, describe and create two-dimensional geometric shapes (circle, square, triangle, rectangle). (2.3.1.a)
2-G-14	TLW identify and draw points and lines. (1.3.1.a)
2-G-15	TLW identify and compare two-dimensional geometric figures using congruence and symmetry. (2.2.1)
2-G-16	TLW partition a rectangle into rows and columns of equal sized squares. Count to find the total. (2.3.1.b)
2-G-17	TLW recognize the equal shares of identical wholes need not have the same shape. (2.3.1.d)
2-G-18	TLW measure the length of an object using two different length units and describe how the measurements relate to the size of the specific unit. (2.3.3.d)
2-G-19	TLW compare the difference in length of objects using inches, feet, centimeters, or meters. (2.3.3.f)
2-G-20	TLW represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2,

etc. and represent whole number sums and differences within 100 on a number line. (2.3.3.g)

2-G-21   TLW use measurement lengths and addition and subtraction within 100 to solve real-life problems. (2.3.3.h)

2-D-1   TLW read, interpret, and create bar graphs. (2.4.1.a, 2.4.2.a)

2-D-2   TLW read and interpret line, circle, and pictographs. (2.4.1.a)

2-D-3   TLW conduct a survey using tally marks and display the information in a bar graph. (2.4.1.a)

2-D-4   TLW describe the likelihood of an event. (2.4.3)

2-D-5   TLW conduct a probability experiment. (2.4.3)

Math Curriculum

Grade 3

3-N-1   TLW read, write, and explain standard numbers through 100,000. (3.1.1.a)

3-N-2   TLW write numbers in expanded form up to 100,000. (3.1.1.a)

3-N-3   TLW compare numbers up to 100,000 by reading and using the symbols >, <, and =. (3.1.1.b)

3-N-4   TLW round numbers to the nearest ten and to the nearest hundred. (3.1.1.c)

3-N-5   TLW identify fractional parts of a whole. (3.1.1.e, 3.3.1.c)

3-N-6   TLW identify fractional parts of a set. (3.1.1.g)

3-N-7   TLW represent a given number in a variety of ways. (ie: 18= 9+9, 6x3). (3.1.1.a)

3-N-8   TLW read, write, and explain decimal numbers in words and standard form through the tenths. (3.1.1.a)

3-N-9   TLW identify the missing numbers on a number line (positive and negative). (3.1.1.h)

3-N-10   TLW identify the value of a half-dollar, $1, $5, $10, and $20 bill. (3.1.1.h)

3-N-11   TLW find the total value of a mixed collection of coins and bills up to $20. (3.1.1.h)

3-N-12   TLW demonstrate a specified amount up to $20, by selecting the least amount of coins and bills. (3.1.1h)

3-N-13   TLW place the dollar/cents signs and decimals appropriately when writing money values. (3.1.1h)

3-N-14   TLW add and subtract fractions with like denominators. (3.1.1)

3-N-15   TLW add and subtract numbers with decimals to the tenths. (3.1.1)

3-N-16   TLW use multiplication and division symbols to write fact families. (3.1.2.f)

3-N-17   TLW add two-, three- and four-digit numbers with/without regrouping. (3.1.2.a)

3-N-18   TLW subtract two-, three- and four-digit numbers with/without regrouping and including 0 as a digit. (3.1.2.b)

3-N-19   TLW estimate the sum and difference of two- and three-digit numbers using rounding.   (3.1.2.h)

3-N-20   TLW add and subtract money values with/without a calculator. (3.1.2.b)

3-N-21   TLW verbally recall from memory the basic multiplication and division facts through 12.   (3.1.2.g)

3-N-22   TLW write the products of the basic multiplication facts through 12 with/without calculators. (3.1.2.g)

3-N-23   TLW multiply two and three-digit numbers by a one-digit number with/without regrouping. (3.1.2)

3-N-24   TLW write the quotients of the division facts through 12 with/without calculators. (3.1.2.g)

3-N-25   TLW represent and understand a fraction as a number on a number line. (3.1.1.d)

3-N-26   TLW show and identify equivalent fractions using visual representations including pictures, manipulatives, and number lines. (3.1.1.f)

3-N-27   TLW compare and order fractions having the same numerators or

denominators using visual representations, comparison symbols, and verbal reasoning.(3.1.1.i)

| 3-N-28 | TLW estimate sums and differences of whole numbers and check the reasonableness. (3.1.2.h) |

3-N-28   TLW estimate sums and differences of whole numbers and check the reasonableness. (3.1.2.h)

3-N-29   TLW use concrete materials to create patterns in multiplication. (3.1.2.c)

3-N-30   TLW identify and use various division symbols (division sign, division bar, division box). (3.1.2.f)

3-N-31   TLW use drawings, words, arrays, symbols, repeated addition, equal groups, and number lines to explain the meaning of multiplication. (3.1.2.c)

3-N-32   TLW use words and symbols to explain the meaning of the Zero Property and Identity Property of multiplication. (3.1.2.d)

3-N-33   TLW multiply one digit whole numbers by multiples of 10 in the range of 10 to 90. (3.1.2.e)

3-A-1   TLW identify common patterns found in a multiplication table. (3.2.1.a)

3-A-2   TLW interpret a multiplication equation as equal groups (e.g., interpret 4 x 6 as the total number of objects in four groups of six objects each). Represent verbal statement of equal groups as multiplication equations. (3.2.1.b)

3-A-3   TLW apply the commutative and associative properties as strategies to multiply. (3.2.2.a)

3-A-4   TLW solve real-world problems involving two-step equations (involving two operations) involving whole numbers using addition and subtraction. (3.2.3.a)

3-A-5   TLW solve and write story problems using addition, subtraction, multiplication, and division. (3.2.3.b)

3-G-1   TLW measure using centimeters and meters. (3.3.3.e)

3-G-2   TLW measure and read temperature accurately to the nearest degree using Celsius and Fahrenheit. (3.3.3)

3-G-3   TLW recognize cups and pints (2 cups = 1 pint). (3.3.3.d)

3-G-4   TLW measure using quart, half-gallon, and gallon. (3.3.3.d))

3-G-5	TLW tell the difference between a.m. and p.m. (3.3.3.b)
3-G-6	TLW tell time to the minute. (3.3.3.b)
3-G-7	TLW measure to the nearest half-inch, inch, foot, and yard. (3.3.3.e)
3-G-8	TLW identify, compare and contrast features of three-dimensional objects with corresponding two-dimensional figures including a cube, rectangular prism, cylinder, cone, and sphere. (3.3.1)
3-G-9	TLW identify and define a line and line segment. (3.3.1)
3-G-10	TLW identify congruent figures. (3.3.1)
3-G-11	TLW calculate and define the area of a figure using metric and standard measurement. (3.3.3g)
3-G-12	TLW calculate and define the perimeter of a many-sided figure using metric and standard measurement. (3.3.3.a)
3-G-13	TLW draw all possible lines of symmetry in two-dimensional shapes. (3.3.1)
3-G-14	TLW identify the number of sides, angles, and vertices of two-dimensional shapes. (3.3.1.a)
3-G-15	TLW sort quadrilaterals into categories (e.g., rhombuses, squares, and rectangles). (3.3.1.b)
3-G-16	TLW solve real-world problems involving addition and subtraction of time intervals and find elapsed time. (3.3.3.c)
3-D-1	TLW construct displays that represent data (bar, line, circle, and pictograph). (3.4.1)
3-D-2	TLW read, write and explain positive numbers (number line and thermometer). (3.4.1)
3-D-3	TLW read and write number lines demonstrating skip counting of positive numbers (2, 5, and 10). (3.4.1)
3-D-4	TLW analyze data. (e.g. bar, line, circle, and pictograph). (3.4.2)

Math Curriculum

Grade 4

4-N-1	TLW use and interpret various mathematical symbols and properties to write and simplify expressions and sentences. (4.1)
4-N-2	TLW identify, describe, and extend arithmetic patterns using concrete materials and tables. (4.1) (4.4.)
4-N-3	TLW add, subtract, and estimate numbers with decimals to the hundredths. (4.1.1)
4-N-4	TLW recognize whole numbers. (4.1.1.a)
4-N-5	TLW read, write, and explain numbers in word, standard, and expanded form up to millions. (4.1.1.a)
4-N-6	TLW read, write, and explain decimal numbers in word and standard form through the hundredths place. (4.1.1.a)
4-N-7	TLW recognize a digit in one place represents ten times what it represents in the place to its right and 1/10 what it represents in the place to its left. (4.1.1.b)
4-N-8	TLW multiply by ten and multiples of ten. (4.1.1.b)
4-N-9	TLW classify a number up to 100 as prime or composite. (4.1.1.c)
4-N-10	TLW determine whether a given whole number up to 100 is a multiple of a given one-digit number. (4.1.1.d)
4-N-11	TLW identify factors and multiples of numbers. (4.1.1.d) (4.1.1.e)
4-N-12	TLW use x and ÷ to write fact families. (4.1.1.e)
4-N-13	TLW use multiplication as a check for division. (4.1.1.e)
4-N-14	TLW compare numbers up to millions and decimals through the hundredths by reading and using the symbols >, <, ≥, ≤, and =, and visual representations. (4.1.1.f)
4-N-15	TLW round numbers to any given place up to millions. (4.1.1.g)
4-N-16	TLW read, write, and explain the Roman numerals 1 – 100.

4-N-17	TLW use decimal notation for fractions with denominators of 10 or 100. (4.1.1.h)
4-N-18	TLW identify fractions that are equivalent to one whole. (4.1.1.i)
4-N-19	TLW solve for equivalent fractions. (4.1.1.i)
4-N-20	TLW identify fractional parts of a set.
4-N-21	TLW write fractions in lowest terms.
4-N-22	TLW explain how to change a mixed number to a fraction and how to change a fraction to a mixed number. (4.1.1.j)
4-N-23	TLW compare fractions with like and unlike denominators using the symbols <, >, =., visual representation (number line) and verbal reasoning (benchmarks or common numerators or denominators. (4.1.1.k)
4-N-24	TLW decompose a fraction into a sum of fractions with the same denominator in more than one way and record each decomposition with an equation and a visual representation. (4.1.1.l)
4-N-25	TLW identify fractional parts of a whole (one unit – i.e. ¼, 2/4, ¾). (4.1.1.l)
4-N-26	TLW use addition as a check for subtraction. (4.1.2.)
4-N-27	TLW use + and – to write fact families. (4.1.2)
4-N-28	TLW will calculate change up to $20. (4.1.2)
4-N-29	TLW add and subtract multi-digit numbers using the standard algorithm. (4.1.2.a)
4-N-30	TLW multiply a multi-digit number by a one-digit number. (4.1.2.b)
4-N-31	TLW multiply a two-digit whole number by a two-digit whole numbers using the standard algorithm. (4.1.2.c)
4-N-32	TLW divide a multi-digit number by a single-digit number with/without remainders. (4.1.2.d)
4-N-33	TLW use drawings, words, and symbols to explain the meaning of addition and subtraction of fractions with like denominators. (4.1.2.e)

4-N-34	TLW add and subtract fractions with like denominators. (4.1.2.f)
4-N-35	TLW multiply a fraction by a whole number. (4.1.2.g)
4-N-36	TLW determine the reasonableness of whole number products and quotients in real-world problems using estimation, compatible numbers, mental computations, or other strategies. (4.1.2.h)
4-N-37	TLW estimate answers for multiplication. (4.1.4)
4-N-38	TLW verbally recall from memory the quotients of the division facts through 12. (4.1.3)
4-N-39	TLW write the quotients of the division facts through 12 with/without calculators. (4.1.3)
4-N-40	TLW estimate answers for division by using rounding. (4.1.4)
4-N-41	TLW identify and use various multiplication and division symbols.
4-A-1	TLW represent a given number in a variety of ways. (Example: $18 = 9x2$, 10+8) (4.2.1)
4-A-2	TLW estimate answers for addition and subtraction using rounding. (4.1.2)
4-A-3	TLW create a simple algebraic expression or equation using a variable for an unknown number to represent a math process. (4.2.1.a)
4-A-4	TLW generate and analyze a number or shape pattern to follow a given rule, such as $y = 3x + 5$ is a rule to describe a relationship between two variables and can be used to find a second number when a first number is given. (4.2.1.b)
4-A-5	TLW interpret and evaluate numerical or algebraic expressions using order of operations (excluding exponents). (4.2.2.a)
4-A-6	TLW solve real-world problems involving multi-step equations comprised of whole numbers using the four operations, including interpreting remainders (4.2.3.a)
4-A-7	TLW solve two-step story problems that require the student to choose the correct operations. (4.2.3.a)
4-A-8	TLW solve story problems containing unnecessary information. (4.2.3.a)

4-A-9	TLW solve problems with more than one solution. (4.2.3.a)
4-A-10	TLW use activities and solve problems developed from other cultures to at least include: Hispanic, Native American, Asian American, and African American. (4.2.3.a)
4-A-11	TLW use a variety of problem solving strategies (explore, plan, solve, examine). (4.2.3.a)
4-A-12	TLW solve real-world problems involving addition and subtraction of fractions and mixed numbers with like denominators. (4.2.3.b)
4-G-1	TLW use geometric models to solve problems. (4.3.1)
4-G-2	TLW construct congruent figures. (4.3.1)
4-G-3	TLW solve problems with geometric figures using congruence, similarities, and simple transformations. (4.3.1)
4-G-4	TLW identify, compare, and contrast features of three-dimensional objects with corresponding two-dimensional figures including a cube, rectangular prism, cylinder, cone, and sphere. (4.3.1)
4-G-5	TLW recognize angles as geometric shapes that are formed where two rays share a common endpoint (vertex). (4.3.1.a.)
4-G-6	TLW classify an angle as acute, obtuse, right, or straight. (4.3.1.b)
4-G-7	TLW identify and draw points, lines, line segments, rays, angles, parallel lines, perpendicular lines, and intersecting lines, and recognize them in two-dimensional figures. (4.3.1.c)
4-G-8	TLW classify two-dimensional shapes based on the presence or absence of parallel and perpendicular lines, or the presence or the absence of specific angles. (4.3.1.d)
4-G-9	TLW recognize and draw lines of symmetry in two-dimensional figures. (4.3.1.h)
4-G-10	TLW identify right triangles. (4.3.1.e)
4-G-11	TLW measure angles in whole number degrees using a protractor. (4.3.1.f)

4-G-12   TLW sketch angles of a specified measure. (4.3.1.g)

4-G-13   TLW describe locations on a coordinate plane. (4.3.2)

4-G-14   TLW identify simple transformations. (4.3.2)

4-G-15   TLW calculate the volume of a right rectangular prism using metric and standard measurement. (4.3.3)

4-G-16   TLW calculate the perimeter of a figure using metric and standard measurement. (4.3.3.a)

4-G-17   TLW calculate the area of a square rectangle using metric and standard measurement. (4.3.3.a)

4-G-18   TLW use cups, pints, quarts, and gallons to select the appropriate unit of measure for a given situation. (4.3.3.b)

4-G-19   TLW use ounces, pounds or tons to select the appropriate unit of measure for a given situation. (4.3.3.b)

4-G-20   TLW measure solids in grams. (4.3.3.b)

4-G-21   TLW measure liquids in liters and milliliters. (4.3.3.b)

4-G-22   TLW measure and read temperature accurately to the nearest degree using Fahrenheit and Celsius. (4.3.3.b)

4-G-23   TLW state a given time in a variety of ways. (12:45, a quarter 'til 1:00, etc.) (4.3.3.b)

4-G-24   TLW draw and measure a segment using millimeters. (4.3.3.b)

4-G-25   TLW use centimeters, meters, and kilometers to select the appropriate unit of measure for a given situation. (4.3.3.b)

4-G-26   TLW estimate approximate measure of objects in metric measure. (4.3.3.b)

4-G-27   TLW use inches, feet, and yards to select the appropriate unit of measure for a given situation.   (4.3.3.b)

4-G-28   TLW estimate approximate measure of objects in standard measure. (4.3.3.b)

4-G-29   TLW measure to the nearest ½ inch, foot, and yard. (4.3.3.b)

4-G-30   TLW generate simple conversions from a larger unit to a smaller unit within the customary and metric systems of measurement. (4.3.3.c)

4-G-31   TLW identify the equivalents of a gallon using cups, pints, and quarts. (4.3.3.c)

4-D-1   TLW construct displays that represent data (bar, line, circle, and pictograph). (4.4.1)

4-D-2   TLW read, write and explain positive and negative numbers and zero (number line and thermometer). (4.4.1.a)

4-D-3   TLW read and write number lines demonstrating skip counting of positive and negative numbers (2, 5, and 10). (4.4.1.a)

4-D-4   TLW analyze data to address situations. (e.g. bar, line, circle, and pictograph). (4.4.2)

4-D-5   TLW solve problems involving addition or subtraction of fractions using information presented in line plots. (4.4.2.a)

4-D-6   TLW describe the likelihood of an event. (4.4.3)

4-D-7   TLW conduct a probability experiment. (4.4.3)

Math Curriculum

Grade 5

5-N-1   TLW identify and display numbers including factors and multiples. (5.1.1)

5-N-2   TLW find the greatest common factor of two numbers. (5.1.1)

5-N-3   TLW find the least common multiple of two numbers. (5.1.1)

5-N-4   TLW solve for equivalent fractions and write in lowest terms. (5.1.1)

5-N-5   TLW compare fractions with like and unlike denominators using the signs >, <, and =. (5.1.1)

5-N-6   TLW Multiply a whole number by a fraction or a fraction by a fraction using models and visual representations. (5.1.2.c)

5-N-7   TLW divide a unit fraction by a whole number and a whole number by a

unit fraction. (5.1.2.d)

5-N-8	TLW explain division of a whole number by a fraction using models and visual representations. (5.1.2.e)
5-N-9	TLW interpret a fraction as a division of the numerator by the denominator. (5.1.2.f)
5-N-10	TLW read, write, and explain numbers in words, standard, and expanded form through billions. (5.1.1.b)
5-N-11	TLW identify and use whole numbers. (5.1.1)
5-N-12	TLW write numbers in expanded form to billions. (5.1.2)
5-N-13	TLW read, write, and explain numbers in words and standard form through the thousandths place. (5.1.2)
5-N-14	TLW compare and order whole numbers, fractions, mixed numbers, & decimal numbers to the thousandths place & represent comparisons using symbols ($>$, $<$, or $=$). (5.1.1.b)
5-A-1	TLW form ordered pairs from a rule such as $y=2x$, and graph the ordered pairs on a coordinate plane. (5.2.1a)
5-A-2	TLW interpret and evaluate numerical or algebraic expressions using order of operations (excluding exponents).
5-A-3	TLW Solve real-world problems involving addition and subtraction of fractions and mixed numbers with like & unlike denominators.
5-A-4	TLW identify the commutative, associative, distributive properties, and properties of zero. (5.1.2)
5-A-5	TLW use variables to recognize and complete math patterns in input and output charts. (5.4.3)
5-A-6	TLW multiply by multi-digit numbers and by three two-digit numbers. (5.1.3)
5-A-7	TLW determine the reasonableness of computations involving whole numbers, fractions, & decimals through rounding and estimation. (5.1.2.i)
5-A-8	TLW compute the average of a given set of numbers. (5.1.3)
5-A-9	TLW multiply fractions. (5.1.2)

5-A-10	TLW solve division problems with two-digit divisors and check by using multiplication. (5.1.4)
5-A-11	TLW add and subtract fractions and mixed numbers with like and unlike denominators. (5.1.2.h)
5-A-12	TLW convert mixed numbers to improper fractions and convert improper fractions to mixed numbers. (5.1.3)
5-A-13	TLW define the terms addend, sum, factor, product, quotient, divisor, dividend, and difference. (5.1.2)
5-A-14	TLW solve multiple step story problems using multiplication, division, subtraction, and addition that require the student to choose the correct operations and/or interpret the remainder. (5.1.3)
5-A-15	TLW represent a given number in a variety of ways using the correct order of operations. (Example: 18 = 9x2, 10+8, 4x3+6). (5.1.2)
5-A-16	TLW use activities and solve problems developed from other cultures. (5.1.3)
5-A-17	TLW round a five-digit whole number to a given place value. (5.1.4)
5-A-18	TLW add and subtract decimals through the thousandths. (5.1.3)
5-A-19	TLW multiply a whole number by a decimal number. (Example: 32.5 x 4) (5.1.3)
5-G-1	TLW Solve problems given formulas for perimeter, volume and surface area of a rectangular prism. (5.2.5)
5-G-2	TLW identify faces, edges and vertices of rectangular prisms. (5.3.1.b)
5-G-3	TLW measure and identify acute, right, obtuse, straight and congruent angles. (5.2.1)
5-G-4	TLW identify equilateral, isosceles, and scalene triangles by stating the properties of each. (5.2.1)
5-G-5	TLW identify, describe, compare, and classify two and three dimensional geometric figures including: parallelograms, polygons, circles, prisms, pyramids, cones, spheres, and cylinders. (5.2.1)
5-G-6	TLW identify, describe, compare, and classify lines, line segments, rays,

angles, parallel and perpendicular lines. (5.2.1)

5-G-7   TLW construct a circle using a compass when given either a radius or a
              diameter. (5.2.1)

5-G-8   TLW define and use geometric terms including congruency, symmetry,
              and similarity. (5.2.4)

5-G-9   TLW draw geometric figures using slides, turns, and flips. (5.2.3)

5-G-10   TLW identify the origin, x axis, and y axis of the coordinate plane.

5-G-11   TLW graph and name points in the first quadrant of the coordinate plane
              using ordered pairs of whole numbers.(5.3.2.b)

5-G-12   TLW measure to the nearest ¼ inch. (5.2.5)

5-G-13   TLW define basic metric prefixes of milli, centi, deci, and kilo. (5.2.5)

5-G-14   TLW select the appropriate measure, standard or metric, to determine
              linear, liquid, and/or mass/weight. (5.2.5)

5-G-15   TLW convert inches, feet, yards; and millimeters, centimeters, meters, and
              kilometers. (5.2.5)

5-G-16   TLW compute intervals of time using a.m. and p.m. (time lapse). (5.2.5)

5-G-17   TLW compute mixed units of time requiring conversion. (i.e. 65 minutes
              = 1 hour, 5 minutes). (5.2.5)

5-G-18   TLW measure volume of solid figures in cubic units. (5.3.3.a)

5-G-19   TLW use models to measure the volume of rectangular prisms in cubic
              units by counting cubic units. (5.3.3.b)

5-D-1   TLW create displays that represent data. (5.4.1)

5-D-2   TLW analyze data to address the situation. (5.4.2)

5-D-3   TLW use observations, surveys, and experiments to collect, represent, and
              interpret data using tables, charts, and graphs. (5.4.2.a)

5-D-4   TLW compute the mean, median, mode, & range of a set of numbers.
              (6.4.2.d)

5-D-5   TLW conduct experiments to demonstrate an understanding of theoretical

probability, and relative frequency. (5.4.3)

Math Curriculum

Grade 6

6-N-1   TLW find the greatest common factor of three numbers. (6.1.1)

6-N-2   TLW find the least common multiple of three numbers. (6.1.1)

6-N-3   TLW determine common factors and common multiples using prime
             factorization of numbers with and without exponents. (6.1.1.a)

6-N-4   TLW use powers and exponents in expressions. (6.1.1)

6-N-5   TLW represent non-negative whole numbers using exponential
             notation. (6.1.1.b)

6-N-6   TLW evaluate expressions with positive exponents. (6.1.2.b)

6-N-7   TLW compare and order decimal numbers to the hundred-thousandths
             place using the signs <,>, and =. (6.1.1)

6-N-8   TLW add integers. (6.1.3)

6-N-9   TLW convert among fractions, decimals, and percents using multiple
             representations. (6.1.1.d)

6-N-10   TLW write, read and explain numbers in words and standard form through
             the billions. (6.1.1)

6-N-11   TLW write and explain the differences between prime and composite
             numbers. (6.1.1)

6-N-12   TLW use the divisibility rules for 2, 3, 5, 6, 9, and 10 to determine
             whether numbers are divisible by other numbers. (6.1.3)

6-N-13   TLW compare and order rational numbers both on the number line and not
             on the number line. (6.1.1.c)

6-N-14   TLW compare and order integers and absolute value both on the number
             line and not on the number line. (6.1.1.h)

6-N- 15   TLW determine absolute value of rational numbers. (6.1.1.i)

6-N-16   TLW model integers using drawings, words, manipulatives, number lines,
             and symbols. (6.1.1.g)

6-A-1   TLW solve one-step equations with nonnegative rational numbers using addition, subtraction, multiplication and division. (6.2.2.e)

6-A-2   Write equations (e.g. one operation, one variable) to represent real-world problems involving non-negative rational numbers. (6.2.3.a)

6-A-3   TLW solve multi-step equations with one variable. (6.2.1.a)

6-A-4   TLW use substitution to determine if a given value for a variable makes an equation or inequality true. (6.2.2.b)

6-A-5   TLW represent and analyze the relationship between two variables using graphs, tables, and one-step equations. (6.2.1.c)

6-A-6   TLW use order of operations to evaluate algebraic expressions for given replacement values of variables. (6.2.2.c & d)

6-A-7   TLW recognize and apply the commutative, associative, distributive, Inverse, and identity properties, and the properties of zero to recognize and generate equivalent algebraic expressions. (6.2.1.b)

6-A-8   TLW simplify expressions using the distributive property and combining like terms. (6.2.2.a)

6-A-9   TLW use variables to recognize and describe patterns. (6.3.1 & 6.3.3)

6-A-10   TLW solve problems using ratios and unit rates. (6.2.3.d)

6-A-11   TLW use equivalent ratios relating quantities with whole numbers to create a table and to find missing values in the table. (6.2.2.f)

6-A-12   TLW solve problems involving percents of numbers. (6.2.3.c)

6-A-13   TLW solve problems involving non-negative rational numbers. (6.2.3b)

6-A-14   TLW represent inequalities on a number line (e.g. graph x > 3). (6.2.2.g)

6-A-15   TLW add and subtract mixed numbers with regrouping in the answer. (6.1.2)

6-A-16   TLW multiply and divide non-negative fractions and mixed numbers with common and uncommon denominators. (6.1.2.a)

6-A-17   TLW add, subtract, multiply, & divide decimals using the standard algorithms. (6.1.2.d)

6-A-18	TLW write and solve story problems using addition, subtraction, division, and multiplication. (6.1.3)
6-A-19	TLW use activities and solve problems developed from other cultures. (6.1.3)
6-A-20	TLW solve multiple-step story problems that require the student to choose the correct operations. (6.1.3)
6-A-21	TLW multiply and divide multi-digit whole numbers using the standard algorithms. (6.1.2.c)
6-A-22	TLW write and solve percent equations. (6.3.3)
6-A-23	TLW use rounding to estimate and check reasonableness of answers involving all operations.. (6.1.2.e)
6-A-24	TLW divide a multi-digit number by a three or more digit number with/without remainders. (8.2.3)
6-A-25	TLW evaluate expressions using the order of operations. (6.1.3)
6-A-26	TLW round decimal numbers to the hundred-thousandths place. (6.3.3)
6-G-1	TLW compute perimeter, volume, and surface area and perimeter of solids using metric and standard measurement. (6.2.5)
6-G-2	TLW draw angles of a given number of degrees. (6.2.5)
6-G-3	TLW identify, describe, compare, and classify two and three dimensional geometric figures including: parallelograms, polygons, circles, prisms, pyramids, cones, spheres, and cylinders. (6.2.1)
6-G-4	TLW identify & create nets to represent two-dimensional drawings of geometric solids. (6.3.1.a)
6-G-4	TLW identify, describe, compare, and classify lines, line segments, rays, angles, parallel and perpendicular lines. (6.2.1)
6-G-5	TLW describe and define lines of symmetry. (6.2.1)
6-G-6	TLW distinguish between congruent and similar figures. (6.2.1)
6-G-7	TLW compute the circumference and area of a circle using metric and standard measurement. (6.2.5)

6-G-8   TLW draw geometric figures using rotations, reflections, and scale. (6.2.3)

6-G-9   TLW define and use geometric terms. (6.2.1)

6-G-10   TLW identify the ordered pair of a given point in the coordinate plane. (6.3.2.a)

6-G-11   TLW plot the location of an ordered pair in the coordinate plane. (6.3.2.b) (6.2.2)

6-G-12   TLW identify the quadrant of a given point in the coordinate plane. (6.3.2.c)

6-G-13   TLW draw polygons in the coordinate plane given coordinates for the vertices. (6.3.2.d)

6-G-14   TLW calculate vertical and horizontal distances in the coordinate plane to find perimeter and area. (6.3.2.e)

6-G-15   TLW measure to the nearest 1/8 inch. (6.1.4)

6-G-16   TLW select the appropriate measure, standard or metric, to determine linear, liquid, and mass/weight. (6.2.5)

6-G-17   TLW use millimeters, centimeters, meters, and kilometers to select the appropriate unit of measure for a given situation. (6.2.5)

6-G-18   TLW convert inches, feet, yards; and millimeters, centimeters, meters, and kilometers. (6.2.5)

6-G-19   TLW convert linear, liquid, and mass units within measuring systems using proper conversion factors. (6.2.5)

6-G-20   TLW determine the area of quadrilaterals (e.g. rectangular prisms) by applying formulas. (6.3.3)

6-D-1   TLW find the mean, median, and mode of a set of data. (6.4.1)

6-D-2   TLW compare the mean, median, mode, & range from two sets of data. (6.4.2.d)

6-D-3   TLW solve problems by interpreting circle, bar, line, and pictographs. (6.3.2)

6-D-4   TLW compare and interpret data from tables, graphs, and plots to solve

problems. (6.4.2. a & b)

6-D-5   TLW find the probability of an event. (6.4.3)

6-D-6   TLW interpret and apply concepts of probability. (6.4.3)

6-D-7   TLW construct a circle, bar, line, and pictograph. (6.3.2)

Math Curriculum

Grade 7

7-N-1   TLW compute the percentage of a given number. (7.1.2)

7-N-2   TLW change a fraction to a percentage. (7.1.2)

7-N-3   TLW add, subtract, multiply, and divide integers. (7.1.2)

7-N-4   TLW write numbers in expanded form using exponential and scientific notation. (7.1.2)

7-N-5   TLW identify prime and composite numbers. (7.1.1)

7-N-6   TLW find greatest common factors and least common multiples using prime factorization. (7.1.1)

7-N-7   TLW write fractions as decimals and vice versa. (7.1.1)

7-N-8   TLW compare and order fractions. (7.1.1)

7-N-9   TLW use canceling when multiplying fractions. (7.1.2)

7-N-10   TLW use order of operations to evaluate expressions. (7.1.2)

7-N-11   TLW estimate sums, differences, products, and quotients. (7.1.2)

7-N-12   TLW add, subtract, multiply, and divide decimals. (7.1.2)

7-N-13   TLW add, subtract, multiply, and divide fractions and mixed numbers. (7.1.2)

7-N-14   TLW write and solve proportions. (7.1.2)

7-N-15   TLW write and solve percent equations. (7.1.2)

7-N-16   TLW round numbers to a given place value. (7.1.1)

7-N-17   TLW identify the appropriate operations to do the correct calculation when solving word problems. (7.1.1)

7-N-18   TLW convert units within the metric system. (7.1.2)

7-N-19	TLW use activities and solve problems developed from other cultures to at least include: Hispanic, Native American, Asian American, and African American.
7-A-1	TLW solve algebraic equations using mental math. (7.2.1)
7-A-2	TLW write inverses using addition, subtraction, multiplication, and division. (7.2.1)
7-A-4	TLW write and solve problems that apply the learned concepts to real life situations. (7.2.3)
7-A-5	TLW solve one-step equations using inverses. (7.2.2)
7-A-6	TLW write algebraic expressions using addition, subtraction, multiplication, and division. (7.2.1)
7-A-7	TLW solve two-step equations. (7.2.3)
7-G-1	TLW measure the length of the sides of a polygon and find its perimeter. (7.3.3)
7-G-2	TLW use geometric terms and representations to describe the physical world. (7.3.1)
7-G-3	TLW identify vertices, faces, and edges of solid figures. (7.3.1)
7-G-4	TLW differentiate between prisms and pyramids. (7.3.1)
7-G-5	TLW classify triangles and quadrilaterals by their sides and angles. (7.3.1)
7-G-6	TLW apply transformations to geometric figures such as translations, rotations, reflections, dilations. (7.3.2)
7-G-7	TLW find corresponding sides of similar figures using proportions. (7.3.3)
7-G-9	TLW calculate area of polygons. (7.3.3)
7-G-10	TLW Solve real world problems involving surface area and volume of composite shapes made from rectangular and triangular prisms. (7.3.3)
7-G-11	TLW graph integer coordinates. (7.3.1)
7-G-12	TLW calculate the area and circumference of a circle on and off the coordinate plane. (7.3.3)
7-D-1	TLW calculate mean, median, and mode for a set of data. (7.4.1)
7-D-2	TLW read, interpret, and draw various types of graphs. (7.4.1)
7-D-3	TLW find the probability of an event. (7.4.3)

7-D-4   TLW use the tree diagram to show compound events. (7.4.3)

7-D-5   TLW list the outcomes and events for a sample space. (7.4.3)

Math Curriculum

8th Grade

8-N-1   TLW describe number sets (8.1.1)

8-N-2   TLW utilize whole numbers, fractions, and decimals in mathematical operations
             of addition, subtraction, multiplication, and division. (8.1.2)

8-N-3   TLW write numbers in both scientific notation and in standard form, and translate
             between the two forms. (8.1.2)

8-N-4   TLW demonstrate the ability to write numbers in expanded form using
             exponential notation. (8.1.1)

8-N-5   TLW identify the greatest common factor and least common multiple using prime
             factorization. (8.1.1)

8-N-6   TLW identify and determine a relationship between fractional and decimal
             numbers. (8.1.1)

8-N-7   TLW calculate percentages from rationals, decimal, fractional, and real life
             numbers. (8.1.2)

8-N-8   TLW estimate sums, differences, products, and quotients of fractions and
             decimals. (8.1.2)

8-N-9   TLW perform prime factorizations. (8.1.2)

8-N-10   TLW solve problems using the rules for order of operations in computational
             skills. (8.1.2)

8-N-11   TLW perform mathematical operations using rational numbers. (8.1.2)

8-N-12   TLW compare and contrast measurements in the metric system and the standard
             system. (8.1.2)

8-N-13   TLW utilize the prefixes in the metric system to make conversions in
             measurements of length, mass, and volume. (8.1.1)

8-A-1   TLW solve proportions. (8.2.2)

8-A-2   TLW compare and order integers utilizing a number line. (8.2.1)

8-A-3   TLW solve integer equations and integer inequalities. (8.2.2)

8-A-4	TLW utilize graphing on a number line to solve integer equations and inequalities. (8.2.1)
8-A-5	TLW translate verbal phrases into algebraic expressions. (8.2.1)
8-A-6	TLW graph linear equations on a coordinate plane. (8.2.1)
8-A-7	TLW find the slope of a line. (8.2.1)
8-A-8	TLW graph linear inequalities. (8.2.1)
8-A-9	TLW find the use of squares and square roots. (8.2.1)
8-A-10	TLW use the Pythagorean Theorem to find the length of the side of a right triangle and to solve problems. (8.2.3)
8-A-11	TLW write and solve problems using algebraic concepts that involve real life applications. (8.2.3)
8-A-12	TLW identify the appropriate operations and do the correct calculation when solving world problems. (8.2.2)
8-A-13	TLW use activities and solve problems developed from other cultures. (8.2.3)
8-G-1	TLW classify geometric figures. (8.3.1)
8-G-2	TLW apply the formulas to solve problems involving perimeter and area of geometric figures. (8.3.3)
8-G-3	TLW solve problems using formulas for volume and surface area of rectangular prisms, cylinders, cones, and spheres. (8.3.3)
8-G-4	TLW identify points, lines, planes, rays, segments, angles, and parallel, perpendicular, and skew lines. (8.3.1)
8-G-5	TLW classify angles as acute, right, obtuse, or straight. (8.3.1)
8-G-6	TLW classify polygons by angles and sides. (8.3.1)
	8-G-7 TLW apply transformations to geometric figures such as translations or slides, rotations or turns, reflections or flips, and scale or dilate. (8.3.2)
8-G-8	TLW use geometric terms and representations to describe the physical world. (8.3.1)
8-D-1	TLW read,create, and interpret various types of graphs. (8.4.1)
8-D-2	TLW solve problems and make predictions using an appropriate line of best fit. (8.4.2)
8-D-3	TLW interpret and apply concepts of probability. (8.4.3)

8-D-4   TLW calculate measures of central tendency (mean, median, mode) to describe data sets. (8.4.1)

8-D-5   TLW list outcomes and find the relative frequency of events and then determine the probability of simple events. (8.4.3)

Math Curriculum

Grade 9

Pre-Algebra

PAL-1   TLW describe number sets (11.1.1.a)

PAL-2   TLW utilize whole numbers, fractions, and decimals in mathematical operations of addition, subtraction, multiplication, and division. (11.1.2.a)

PAL-3   TLW write numbers in both scientific notation and in standard form, and translate between the two forms.

PAL-4   TLW demonstrate the ability to write numbers in expanded form using exponential notation. (11.1.2.b)

PAL-5   TLW identify and calculate the greatest common factor (GCF) and least common multiple (LCM) using prime factorization. (11.2.2.j)

PAL-6   TLW identify and determine a relationship between fractional and decimal numbers. (11.1.1.a)

PAL-7   TLW calculate percentages from rationals, decimal, fractional, and real life numbers. (11.1.1.a)

PAL-8   TLW estimate sums, differences, products, and quotients of fractions and decimals. (11.1.2.d)

PAL-9   TLW perform prime factorizations. (11.2.2.j)

PAL-10   TLW solve problems using the rules for order of operations in computational skills. (11.1.2.a, 11.1.2.b)

PAL-11   TLW perform mathematical operations using rational numbers. (11.1.2.a)

PAL-12   TLW compare and contrast measurements in the metric system and the standard system. (11.3.3.b)

PAL-13   TLW utilize the prefixes in the metric system to make conversions in measurements of length, mass, and volume. (11.3.3.b)

PAL-14   TLW solve proportions. (11.2.2.a)

PAL-15   TLW compare and order integers utilizing a number line. (11.1.1.a)

PAL-16   TLW solve linear equations and linear inequalities. (11.2.2.g)

PAL-17   TLW utilize graphing on a number line to solve integer equations and inequalities. (11.2.2.g)

PAL-18   TLW calculate measures of central tendency (mean, median, mode) to describe data sets. (11.4.2.a)

PAL-19   TLW list outcomes and find the relative frequency of events and then determine the probability of simple events. (11.4.3.b)

PAL-20   TLW classify geometric figures. (11.3.1.a)

PAL-21   TLW apply the formulas to solve problems involving perimeter and area of geometric figures. (11.3.3.e)

PAL-22   TLW solve problems using formulas for volume and surface area of rectangular prisms, cylinders, cones, and spheres. (11.3.3.e)

PAL-23   TLW translate verbal phrases into algebraic expressions. (11.2.3.a)

PAL-24   TLW graph linear equations on a coordinate plane. (11.2.1.e)

PAL-25   TLW find the slope of a line. (11.2.1.e)

PAL-26   TLW graph linear inequalities. (11.2.1.e)

PAL-27   TLW identify points, lines, planes, rays, segments, angles, and parallel, perpendicular, and skew lines. (11.3.1.a)

PAL-28   TLW classify angles as acute, right, obtuse, or straight. (11.3.2.e)

PAL-29   TLW classify polygons by angles and sides. (11.3.2.f)

PAL-30   TLW apply transformations to geometric figures such as translations or slides, rotations or turns, reflections or flips, and scale or dilate. (11.3.2.g)

PAL-31   TLW find the use of squares and square roots. (11.1.1.c)

PAL-32   TLW use the Pythagorean theorem to find the length of the side of a right triangle and to solve problems. (11.3.1.d)

PAL-33   TLW write and solve problems using algebraic concepts that involve real life applications.(11.2.3)

PAL-34   TLW read and interpret various types of graphs. (11.2.1.b)

Math Curriculum

Algebra 1

High School AND 8ᵀᴴ GRADE

ALI-1   TLW translate verbal expressions into mathematical expressions and vice versa. (11.2.2.c)(8.1.2)

ALI-2   TLW apply the order of operations to evaluate real number expressions. (11.1.2a & 11.1.2.b)(8.1.2)

ALI-3   TLW apply the distributive property to simplify expressions. (11.1.2.b)(8.1.3)

ALI-4   TLW apply properties of multiplication and addition to simplify expressions. (11.1.2.b)(8.1.3)

ALI-5   TLW add, subtract, multiply, and divide rational numbers. (11.1.2.a)(8.1.3)

ALI-6   TLW solve equations using one operation. (11.2.2.g)(8.3.1)

ALI-7   TLW solve equations using more than one operation. (11.2.2.g)(8.3.3)

ALI-8   TLW solve equations and formulas for a specified variable. (11.2.2.f)(8.3.3)

ALI-9   TLW write and solve proportions. (11.2.2.a)(8.1.3)

ALI-10   TLW write and solve percent equations. (11.2.2.g)(8.1.3)

ALI-11   TLW identify domain, range, and inverse of a function. (11.2.1.d)(8.3.1)

ALI-12   TLW graph linear equations. (11.2.1.e)(8.3.1)

ALI-13   TLW write a linear equation given the solution. (11.2.2.g)(8.3.1)

ALI-14   TLW find the slope of a line using various techniques. (11.2.1.e)(8.3.1)

ALI-15   TLW write equations in slope-intercept and point-form (11.2.1.e)(8.3.1)

ALI-16   TLW write equations for sets of parallel and perpendicular lines. (11.3.2.b)(8.3.1)

ALI-17   TLW solve and graph inequalities. (11.2.2.g)(8.3.1)

ALI-18   TLW solve systems of equations by graphing and substitution and elimination.. (11.2.2.h)(8.3.3)

ALI-19   TLW graph systems of inequalities. (11.2.2.g)(8.3.3)

ALI-20   TLW add, subtract, multiply, and divide polynomials. (11.2.2.i)(8.3.3)

ALI-21   TLW factor using the distributive property. (11.2.2.j)(8.3.3)

ALI-22   TLW factor trinomials. (11.2.2.j)(8.3.3)

ALI-23   TLW solve quadratic equations by factoring. (11.2.2.j)(8.3.3)

ALI-24   TLW add, subtract, multiply, and divide rational expressions. (11.2.2.e)(8.1.3)

ALI-25   TLW simplify radical expressions using addition, subtraction, multiplication and
                division. (11.2.2.e)(8.1.3)

ALI-26   TLW write and solve problems using algebraic concepts that involve real life
                applications. (11.2.3.a)(8.1.3)

ALI-27   TLW use activities and solve problems developed from other cultures to at least
                include: Hispanic, Native American, Asian American, and African American.

ALI-28   TLW given a number, identify which subsets it belongs to. (11.1.1.a)(8.1.1)

ALI-29   TLW estimate solutions to linear equations. (11.2.1.e)(8.1.4)

Math Curriculum

Algebra 2

ALII-1   TLW use the order of operations to evaluate expressions. (11.2.1.a & 11.2.1.b)

ALII-2   TLW solve equations using properties of equality. (11.2.2.g)

ALII-3   TLW solve and graph inequalities. (11.2.2.g)

ALII-4   TLW find the slope of a line. (11.2.1.e)

ALII-5   TLW write equations for parallel and perpendicular lines. (11.2.1.e), (11.3.2.c)

ALII-6   TLW graph inequalities in two variables. (11.2.1.e)

ALII-7   TLW solve systems of equations by elimination and substitution. (11.2.2.h

ALII-8   TLW solve a system of three equations in three variables. (11.2.2.h)

ALII-9   TLW add, subtract, and multiply matrices.

ALII-10   TLW solve systems of equations by using matrices. (11.2.2.h)

ALII-11   TLW add, subtract, multiply, and divide polynomials. (11.2.2.i)

ALII-12   TLW simplify radical expressions. (11.2.2.e)

ALII-13   TLW add, subtract, multiply, and divide radical expressions. (11.2.2.e)

ALII-14   TLW solve radical equations.

ALII-15   TLW solve quadratic equations by factoring, by completing the square, and using
                the quadratic formula. (11.2.2.n)

ALII-16   TLW write equations and graph parabolas, circles, ellipses, and hyperbolas. (11.2.2.l)

ALII-17   TLW identify conic sections from their equations. 11.2.3.k

ALII-18   TLW factor polynomials. (11.2.2.j)

ALII-19   TLW graph functions and their inverses. (11.2.1.h)

ALII-20   TLW add, subtract, multiply, and divide rational expressions. (11.2.2.d)

ALII-21   TLW simplify and evaluate expressions using properties and logarithms.

ALII-22   TLW solve equations with variable exponents using logarithms.

ALII-23   TLW apply sampling techniques to gather and interpret data. (11.4.2.g)

ALII-24   TLW predict and write equations based on analysis of sets of data. (11.4.2.e)

ALII-25   TLW analyze and interpret data using central tendencies and normal distribution. (11.4.2.a)

ALII-26   TLW write and solve problems using algebraic concepts that involve real life applications. (11.2.3.a)

ALII-27   TLW use activities and solve problems developed from other cultures to at least include: Hispanic, Native American, Asian American, and African American.

ALII-28   TLW select and use the correct measuring units, tools, and/or technology. (11.3.1.h)

ALII-29   TLW determine the accuracy and precision of measurements.

ALII-30   TLW convert between metric and standard units of measurement. (12.2.5)

ALII-31   TLW find the probability of an event or events (11.4.3.c)

Math Curriculum

Standards Math

STM-1   TLW identify numbers sets by natural, whole, integer, rational, irrational, and real. (12.1.1) (11.1.1.a)

STM-2   TLW identify domain and range of a relation and its inverse given a set or graph. (12.3.1) (11.2.1.d)

STM-3   TLW express equivalent forms of decimals, percents, and fractions. (12.1.1) (11.2.2.a)

STM-4   TLW apply order of operations to evaluate real numbers expressions. (12.1.2), (12.1.3) (11.1.2.b)

STM-5   TLW add, subtract, multiply and divide real numbers. (12.1.3) (11.1.2.b) (11.1.2.a)

STM-6   TLW apply properties of multiplication and addition to simplify expressions. (12.1.3) (11.1.2.b) (11.1.2.a)

STM-7   TLW simplify expressions with using absolute value and exponents. (12.1.3) (11.1.2.b) (11.1.2.a)

STM-8   TLW multiply and divide expressions in scientific notation. (12.1.3) (11.1.2.b) (11.1.2.a)

STM-9   TLW simplify radical expressions (square root, and cube root) (12.1.3) (11.1.2.b) (11.1.2.a)

STM-10   TLW add, subtract and multiply polynomial expressions. (12.3.3) (11.2.2.i)

STM-11   TLW solve equations with more than one operation. (12.3.3) (11.2.2.g)

STM-12   TLW solve and graph inequalities with more than one operation (12.3.1) (11.2.2.g) (11.2.1.e)

STM-13   TLW solve and graph absolute value equations and inequalities (12.3.1), (12.3.3) (11.2.2.g) (11.2.1.f)

STM-14   TLW solve word problems using one variable/unknown (12.3.3), (12.3.2) (11.2.3.a)

STM-15   TLW plot points on the coordinate plane; identify quadrants, and the axis, and the origin. (12.3.1) (11.2.1.c)

STM-16   TLW find the slope of a line, and the x and y intercept from a graph, equation, or two points. (12.3.1) (11.2.1.e)

STM-17   TLW graph linear equations (12.3.1) (11.2.1.e)

STM-18   TLW write equations in slope-intercept, standard and point-slope form. (12.3.1) (11.2.1.e)

STM-19   TLW identify parallel and perpendicular lines given equations or graphs. (12.3.1) (11.3.2.c)

STM-20   TLW graph linear inequalities. (12.3.1) (11.2.1.e)

STM-21   TLW solve system of linear inequalities. (12.3.3) (11.2.2.h)

STM-22   TLW factor trinomials (12.3.3) (11.2.2.j)

STM-23   TLW Solve quadratic equations by factoring, completing the square, and the quadratic formula. (12.3.3) (11.2.2.n)

STM-24	TLW solve system of equations by graphing and with elimination and substitution. (12.3.3) (11.2.2.h)
STM-25	TLW add, subtract, and multiply (and scalar multiplication) with matrices.
STM-26	TLW identify parent functions and identify transformations of the graph. (12.2.3), (12.3.3) (11.2.1.e) (11.2.1.f) (11.2.1.g)
STM-27	TLW identify direct and indirect proportions/relations. (12.3.2)
STM-28	TLW identify 2D and 3D shapes, identify real-life examples of them and create drawings for them (12.2.1) (11.3.1.h)
STM-29	TLW identify and use properties of angles formed when parallel lines are cut by a transversal. (12.2.1) (11.3.1.b)
STM-30	TLW identify congruent triangles and find missing values. (12.2.1), (12.2.2) (11.3.1.b)
STM-31	TLW identify similar triangles and use proportions to find missing values. (12.2.1) (11.3.1c)
STM-32	TLW use Pythagorean theorem to find missing side lengths. (12.2.1) (11.3.1.d)
STM-33	TLW use special triangles (30-60-90 and 45-45-90) to find the lengths of sides in right triangles. (12.2.1) (11.3.1.d)
STM-34	TLW find the measure of angles and sides in right triangles using sine, cosine and tangent. (12.2.1) (11.3.1.e)
STM-35	TLW find the area and perimeter of polygons (12.2.5) (11.3.3.e)
STM-36	TLW find the surface area and volume of 3D shapes (12.2.5) (11.3.3.e)
STM-37	TLW identify various sampling techniques use to gather data. (12.4.1) (11.4.2.g)
STM-38	TLW find mean, median, mode and range of a set of data, measure of central tendency. (12.4.1) (11.4.2.a)
STM-39	TLW make pie graphs, stem and leaf plots, line graphs, and bar graphs using intervals from given data. (12.4.1) (11.2.3.a)
STM-40	TLW find the probability of single and multiple events. (12.4.3) (11.4.3.c)
STM-41	TLW identify appropriate tools for measuring (12.2.5) (11.3.1.h)
STM-42	TLW convert units of measure including distance, time, and volume. (12.2.5) (11.2.2.a)

Math Curriculum

Geometry

GEO-1   TLW identify and classify points, lines, planes and angles. (12.2.1)(11.3.1.a)

GEO-2   TLW Identify and name polygons by their sides and angles. (12.2.1)(11.3.1.c)

GEO-3   TLW Identify and use the properties of angles formed when parallel lines are cut by a transversal. (12.2.1) (11.3.1.b)

GEO-3A   TLW Find the interior and exterior angles of polygons. (12.2.1)(11.3.1.c)

GEO-4   TLW Prove triangles are congruent. (12.2.1)(11.3.1.b)

GEO-5   TLW Write formal proofs. (12.2.2)(11.3.1.b)

GEO-6   TLW Prove triangles are similar. (12.2.2)(11.3.1.c)

GEO-7   TLW Use a proportion to find the missing parts of similar triangles. (12.2.4)(11.3.1.e)

GEO-8   TLW Identify and use the properties of quadrilaterals. (12.2.1)(11.3.1.b)

GEO-9   TLW Use the Pythagorean Theorem to find missing sides of a right triangle. (12.2.1)(11.3.1.d)

GEO-10   TLW Use the properties of special right triangles (30-60-90 and 45-45-90) to find the length of the missing sides. (12.2.1)(11.3.1.d)

GEO-11   TLW Find the measures of angles and lengths of sides of triangles using sine, cosine, and tangent. (12.2.1)(11.3.1.d)

GEO-12   TLW Apply coordinate geometry to locate objects and to describe objects algebraically. (12.2.2)(11.3.2.b)

GEO-13   TLW Identify and use properties of arcs, chords, secants, tangents, inscribed angles, and central angles. (12.2.1)(11.3.1.g)

GEO-14   TLW Find the measures of angles formed by the intersection of chords, secants, and tangents using their properties. (12.2.1)(11.3.1.g)

GEO-15   TLW Find the area of polygons. (12.2.5)(11.3.3.e)

GEO-16   TLW Find the surface area of solids (cylinders, cones, pyramids, prisms, and spheres). (12.2.5)(11.3.3.e)

GEO-17   TLW Find the volume of solids (cylinders, cones pyramids, prisms, and spheres. (12.2.5)(11.3.3.e)

GEO-18   TLW Write short paragraphs explaining geometric concepts in his/her own words. (12.2.1)

GEO-19   TLW Create activities and solve problems developed from other cultures to at least include: Hispanic, Native American, Asian American, and African American.

GEO-20   TLW Write and solve problems using geometry concepts that involve real life situations. (11.2.3.a)

GEO-21   TLW use the distance formula to find the length of a segment and will use the midpoint formula to find the midpoint of a segment. (12.2.2)(11.3.2.a & 11.3.2.d)

Math Curriculum

Pre-Calculus

PC-1   TLW find composite and inverse functions. (12.3.3) (11.2.1.h)

PC-2   TLW find and graph zeros of functions. (12.3.3) (11.2.1.g)

PC-3   TLW solve systems of equations algebraically. (12.3.3) (11.2.2.h)

PC-4   TLW solve systems of equations using matrices. (12.3.3)

PC-5   TLW graph systems of inequalities. (12.3.1) (11.2.2.h)

PC-6   TLW apply linear programming procedures to solve problems. (12.3.2) (11.2.2.h)

PC-7   TLW sketch graphs of polynomial functions. (12.3.2) (11.2.3.a)

PC-8   TLW graph a function and its inverse. (12.3.3) (11.2.1.h)

PC-9   TLW determine roots of polynomial functions. (12.3.3) (11.2.2.l) (11.2.3.a)

PC-10   TLW graph quadratic equations and inequalities. (12.3.3) (11.2.2.n) (11.2.3.a)

PC-11   TLW find reference angles for a given angle. (11.3.1.e)

PC-12   TLW find values of the six trigonometric functions in standard position. (12.2.1) (11.3.1.e)

PC-13   TLW solve problems using right triangles. (12.2.1) (11.3.1.e)

PC-14   TLW apply the law of sines and the law of cosines to solve problems. (12.2.1) (11.3.1.e)

PC-15   TLWgraph the six trigonometric functions and their variations. (12.2.1) (11.3.1.e)

PC-16   TLW evaluate inverse trigonometric functions. (12.2.1) (11.3.1.e) (11.2.1.h)

PC-17   TLW identify and use various trigonometric identities. (12.2.1) (11.3.1.e)

PC-18   TLW solve trigonometric equations. (12.2.1), (12.3.1)

PC-19   TLW apply sum, difference, double, and half angle identities. (12.2.1)

PC-20   TLW graph polar equations.

PC-21   TLW convert polar coordinates to rectangular coordinates and vice versa.

PC-22   TLW apply properties of exponents. (12.1.3) (11.2.1.a)

PC-23   TLW evaluate and simplify rational expressions. (12.3.3) (11.2.2.e)

PC-24   TLW graph exponential functions. (12.3.1) (11.2.2.c)

PC-25   TLW solve equations using logarithms.

PC-26   TLW find terms/sums of arithmetic and geometric sequences/series. (12.3.3)

PC-27   TLW expand binomials using the binomial theorem.

PC-28   TLW solve problems using permutations and combinations. (12.3.3)

PC-29   TLW write and solve problems that apply the learned concepts to real life
               situations. (11.2.3.a)

PC-30   TLW use activities and solve problems developed from other cultures to at least
               include: Hispanic, Native American, Asian American, and African American.

Math Curriculum

Calculus

CAL-1   TLW calculate domain and range for functions. (12.3.1)(11.2.1.d)

CAL-2   TLW find the sum, product, quotient, and composition of functions.
               (12.3.3)(11.2.2.m)

CAL-3   TLW solve and graph absolute value equations and inequalities. (12.3.1)(11.2.1.f)

CAL-4   TLW classify functions as odd or even. (11.2.1.g)

CAL-5   TLW compare symmetry and asymptotes or graphs. (12.3.2) (11.2.1.g)

CAL-6   TLW calculate the zeros of a function. (12.3.1) (11.2.1.g)

CAL-7   TLW describe the inverse of a function. (12.3.1) (11.2.1.h)

CAL-8   TLW apply the fundamental trigonometric identities. (12.2.1) (11.3.1.e)

CAL-9   TLW calculate the amplitude and period of trigonometric functions. (12.2.1)
               (11.3.2.j & 11.3.2.g)

CAL-10   TLW state and apply limit properties.

CAL-11   TLW solve limits of algebraic functions, including rational functions.

CAL-12   TLW solve limits of trigonometric functions.

CAL-13   TLW solve nonexistent limits.

CAL-14   TLW locate intervals of continuity for functions.

CAL-15   TLW state and apply continuity theorems such as the Mean Value Theorem.

CAL-16   TLW state, apply and show understanding of the definition of the derivative:
$$f(x) = \lim_{h \to 0} \frac{f(x + h) - f(x)}{h}$$

CAL-17   TLW find the derivative of elementary functions.

CAL-18   TLW find the derivative of sums, products, and quotients.

CAL-19   TLW find the derivative of a composite function using the Chain Rule.

CAL-20   TLW find the derivative of an implicitly defined function.

CAL-21   TLW find derivatives using logarithmic differentiation.

CAL-22   TLW find derivatives of higher order.

CAL-23   TLW locate the intervals over which a function is differentiable.

CAL-24   TLW demonstrate an understanding of the relationship between continuity and differentiability.

CAL-25   TLW investigate the slope of a curve by determining tangent and normal lines to a curve.

CAL-26   TLW apply the theory of derivatives to determine intervals of increase, decrease, concavity; relative maximum and minimum point; points of inflection.

CAL-27   TLW solve extreme value problems.

CAL-28   TLW calculate velocity and acceleration of a particle moving along a line.

CAL-29   TLW solve related rates of change problems.

CAL-30   TLW integrate by applying the basic integration formulas.

CAL-31   TLW integrate by substitution (use of identities, change of variables).

CAL-32   TLW express in words the definition of a definite integral as the limit of a sum.

CAL-33   TLW apply the properties of the definite integral.

CAL-34   TLW find area between curves.

CAL-35   TLW find volume of a solid revolution (disk, washer, and shell methods).

CAL-36   TLW find the arc length. (12.2.5) (11.3.3.d)

CAL-37   TLW find the area of surface revolution.

CAL-38   TLW solve rectilinear motion problems involving acceleration, velocity, speed, displacement, and distance traveled.

CAL-39   TLW calculate the average value of a function.

CAL-40   TLW solve work problems with either force or displacement as a variable.