

Nebraska City Public Schools

8th Math / Learner Wills

8.1.1 By the end of eighth grade, students will recognize natural numbers, whole numbers, integers, and rational numbers.

5th Grade

TLW read and write numbers 1,000 through 1,000,000.

TLW read and write decimals in tenths, hundredths, and thousandths.

TLW read and write fractions and mixed numbers.

6th Grade

TLW Recognize, utilize, compare and solve problems using... whole numbers, fractions, decimals.

7th Grade

TLW Recognize, utilize, compare and solve problems using... whole numbers, fractions, decimals rational numbers & integers.

8th Grade

TLW Recognize, utilize, compare and solve problems using...whole numbers, fractions, decimals rational numbers & integers & irrational numbers.

8.1.2 By the end of eighth grade, students will determine equivalences among fractions, decimals, and percents.

5th Grade

TLW compare decimals using $>$, $<$, $=$.

TLW compare fractions using $>$, $<$, $=$.

TLW relate fractions and decimals using manipulatives i.e. calculator, number line.

TLW reduce mixed fractions, improper fractions and proper fractions to the lowest terms.

TLW find equivalent fractions.

6th Grade

TLW Recognize, utilize, compare and solve problems using...whole numbers, fractions, decimals.

TLW Convert fractions to decimals and vice versa.

TLW Convert to percents and ratios and vice versa.

7th Grade

TLW Recognize, utilize, compare and solve problems using... whole numbers, fractions, decimals.

TLW Convert fractions to decimals and vice versa.

TLW Convert to percents and ratios and vice versa.

8th Grade

TLW Recognize, utilize, compare and solve problems using...whole numbers, fractions, decimals.

TLW Convert fractions to decimals and vice versa.

TLW Convert to percents and ratios and vice versa.

8.1.3 By the end of eighth grade, students will write and use numbers in expanded exponential form and scientific notations.

5th Grade

TLW write whole numbers in expanded form to the millions place.

TLW identify place value name of any whole number in a 9 digit number.

6th Grade

TLW find factors and multiples, which involves the following: writing answers in exponential form. expressing numbers in both scientific notation and standard form.

7th Grade

TLW find factors and multiples, which involves the following: writing answers in exponential form. expressing numbers in both scientific notation and standard form.

8th Grade

TLW find factors and multiples, which involves the following: writing answers in exponential form. expressing numbers in both scientific notation and standard form.

8.1.4 By the end of eighth grade, students will identify and display numbers including prime and composite, factors and multiples, divisibility, powers, and properties.

5th Grade

TLW find factors, common factors and the greatest common factors of numbers to 50.

TLW find common multiplies and the least common multiples.

TLW identify divisibility of given numbers by 2, 5, 10.

TLW apply properties of math (associative, commutative, property of one, property of zero).

6th Grade

TLW find factors and multiples, which involves the following: factorization, prime and composite numbers, divisibility rules, least common multiples and greatest common factors.

7th Grade

TLW find factors and multiples, which involves the following: factorization, prime and composite numbers, divisibility rules, least common multiples and greatest common factors.

8th Grade

TLW find factors and multiples, which involves the following: factorization, prime and composite numbers, divisibility rules, least common multiples and greatest common factors.

8.2.1 By the end of eighth grade, students will add, subtract, multiply, and divide decimals and proper, improper, and mixed fractions with uncommon and common denominators with and without the use of technology.

5th Grade

TLW find the lowest terms (reduce).

TLW add and subtract decimals.

TLW multiply decimals.

TLW add and subtract proper fractions with like denominators.

TLW add and subtract proper fractions with unlike denominators.

6th Grade

TLW recognize, utilize, compare and solve problems using.... rational numbers & integers.

7th Grade

TLW recognize, utilize, compare and solve problems using.... rational numbers & integers.

8th Grade

TLW recognize, utilize, compare and solve problems using... rational numbers & integers.

8.2.2 By the end of eighth grade, students will identify the appropriate operation and do the correct calculations when solving word problems.

5th Grade

TLW use the appropriate operation and do the correct calculation when solving 2 step word problems.

6th Grade

TLW identify the appropriate operation and do the correct calculation when solving word problems.

7th Grade

TLW identify the appropriate operation and do the correct calculation when solving word problems.

8th Grade

TLW identify the appropriate operation and do the correct calculation when solving word problems.

8.2.3 By the end of eighth grade, students will solve problems involving whole numbers, integers, and rational numbers (fractions, decimals, ratios, proportions, and percents) with and without the use of technology.

5th Grade

TLW multiply up to 3 digit factors.

TLW divide by 2 digit divisors.

6th Grade

TLW identify the 4 operations to solve problems involving... decimals, fractions, mixed numbers, integers, percents, unit price, discount, sales tax, interest, ratios, rates and proportions, squares and square roots, absolute values.

TLW recognize, utilize, compare and solve problems using rational numbers & integers.

7th Grade

TLW identify the 4 operations to solve problems involving... decimals, fractions, mixed numbers, integers, percents, unit price, discount, sales tax, interest, ratios, rates and proportions, squares and square roots, absolute values.

TLW recognize, utilize, compare and solve problems using rational numbers & integers.

TLW convert from fractions to decimals and vice versa and to percents and ratios and vice versa.

8th Grade

TLW identify the 4 operations to solve problems involving... decimals, fractions, mixed numbers, integers, percents, unit price, discount, sales tax, interest, ratios, rates and proportions, squares and square roots, absolute values.

TLW recognize, utilize, compare and solve problems using rational numbers & integers.

TLW convert from fractions to decimals and vice versa and to percents and ratios and vice versa.

8.2.4 By the end of eighth grade, students will apply the order of operations to solve problems with and without the use of technology.

5th Grade

TLW apply order of operations using a chart to solve problems.

6th Grade

TLW read and write algebraic expressions and equations.

7th Grade

TLW read and write algebraic expressions and equations.

TLW evaluate and use formulas.

TLW graph equations and inequalities on the number line and ordered pairs.

TLW solve equations using two-step equations.

8th Grade

TLW read and write algebraic expressions and equations.

TLW evaluate and use formulas.

TLW graph equations and inequalities on the number line and ordered pairs.

TLW solve equations using two-step equations.

8.2.5 By the end of eighth grade, students will apply strategies of estimation when solving problems with and without the use of technology.

5th Grade

TLW round whole numbers to 10, 100, 1,000, 10,000 & 100,000 places.

TLW round decimals to the tenths and whole number.

TLW estimate products, sums and differences with and / or without the use of technology.

6th Grade

TLW use estimation to evaluate the sensibility of an answer.

TLW estimate and round to the nearest place value to hundred-thousands.

7th Grade

TLW estimate and round to the nearest place value to hundred-thousands.

TLW round decimal numbers to hundredths for money problems.

8th Grade

TLW estimate and round to the nearest place value to hundred-thousands.

TLW round decimal numbers to hundredths for money problems.

8.3.1 By the end of eighth grade, students will select measurement tools and measure quantities for temperature, time, money, distance, angles, area, perimeter, volume, capacity, and weight/mass in standard and metric units at the designated level of precision.

5th Grade

TLW make change and count back up to \$40.00.

TLW select the appropriate tool to measure perimeter and distance using standard and metric units.

6th Grade

TLW measure using a ruler in standard and metric units.

TLW measure using a protractor to measure angles.

TLW solve problems involving the area and perimeter of squares, rectangles, parallelograms and trapezoids and the area and circumference of circles.

7th Grade

TLW measure using a protractor to measure angles.

TLW solve problems involving the area and perimeter of squares, rectangles, parallelograms and trapezoids and the area and circumference of circles.

TLW solve problems involving the volume and surface area of rectangular prisms, cylinders, and cones.

8th Grade

TLW measure using a protractor to measure angles.

8.3.2 By the end of eighth grade, students will convert units within measurement systems using standard and metric, given conversion factors.

5th Grade

TLW convert standard and metric units using an equivalency chart.

6th Grade

TLW convert measurements within the standard system and metric system.

TLW measure using...a ruler in standard and metric units. a protractor to measure angles.

7th Grade

TLW convert measurements within the standard system and metric system

TLW measure using... a ruler in standard and metric units, a protractor to measure angles.

8th Grade

TLW convert measurements within the standard system and metric system.

TLW measure using... a ruler in standard and metric units a protractor to measure angles.

8.4.1 By the end of eighth grade, students will identify, describe, compare, and classify two and three dimensional geometric figures (plane figures like polygons) and (circles and solid figures like prisms, pyramids,

cones, spheres, and cylinders) and lines, line segments, rays, angles, parallel and perpendicular lines.

5th Grade

TLW identify acute, obtuse and right angles.

TLW classify polygons, triangles, and identify quadrilaterals using a reference tool.

TLW label and identify two and three dimensional geometric figures.

6th Grade

TLW recognize, identify and classify... geometric figures, lines, and angles as they relate to the physical world.

TLW recognize.. symmetry and congruence.

7th Grade

TLW recognize, identify and classify... geometric figures, lines, and angles as they relate to the physical world.

TLW recognize.. symmetry and congruence. rotation, reflection and translations.

8th Grade

TLW recognize, identify and classify... geometric figures, lines, and angles as they relate to the physical world.

TLW recognize.. symmetry and congruence, rotation, reflection and translations.

TLW use rotations, reflections and translations to construct a tessellation picture with a triangle, rhombus, hexagon or rectangle.

8.4.2 By the end of eighth grade, students will use geometric properties, the Pythagorean theorem, and the relationships of congruence, similarity, and symmetry.

5th Grade

TLW identify how figures are congruent and symmetric.

6th Grade

TLW be able to recognize, identify and classify... geometric figures, lines, and angles as they relate to the physical world.

TLW recognize.. symmetry and congruence.

7th Grade

TLW be able to recognize, identify and classify... geometric figures, lines, and angles as they relate to the physical world.

TLW find the complementary or supplementary angle or the missing side or angle of a polygon.

TLW recognize.. symmetry and congruence, rotation, reflection and translations.

8th Grade

TLW be able to recognize, identify and classify... geometric figures, lines, and angles as they relate to the physical world.

TLW find the complementary or supplementary angle or the missing side or angle of a polygon.

TLW recognize.. symmetry and congruence, rotation, reflection and translations.

8.4.3 By the end of eighth grade, students will use formulas to solve problems involving perimeter and area of a square, rectangle, parallelogram, trapezoid and area and circumference of circles.

5th Grade

TLW figure the perimeter of polygons.

TLW figure the area of the square and rectangle .

6th Grade

TLW be able to recognize, identify and classify geometric figures, lines, and angles as they relate to the physical world.

7th Grade

TLW be able to recognize, identify and classify geometric figures, lines, and angles as they relate to the physical world.

8th Grade

TLW be able to recognize, identify and classify geometric figures, lines, and angles as they relate to the physical world.

8.4.4 By the end of eighth grade, students will solve problems given formulas for volume and surface area of rectangular prisms, cylinders, and cones.

5th Grade

6th Grade

7th Grade

TLW solve problems involving the volume and surface area of rectangular prisms, cylinders, and cones.

8th Grade

TLW solve problems involving the volume and surface area of rectangular prisms, cylinders, and cones.

8.4.5 By the end of eighth grade, students will apply transformations to two and three dimensional geometric figures.

5th Grade

TLW use and label transformation of two dimensional figures.

6th Grade

TLW recognize symmetry and congruence.

7th Grade

TLW recognize symmetry and congruence. rotation, reflection and translations.

8th Grade

TLW recognize symmetry and congruence rotation, reflection and translations.

TLW use rotations, reflections and translations to construct a tessellation picture with a triangle, rhombus, hexagon or rectangle.

8.4.6 By the end of eighth grade, students will use geometric terms and representations to describe the physical world.

5th Grade

TLW use geometric terms to describe objects in the classroom (sphere, cylinder, cone, and cube).

6th Grade

TLW be able to recognize, identify and classify geometric figures, lines, and angles as they relate to the physical world.

7th Grade

TLW be able to recognize, identify and classify geometric figures, lines, and angles as they relate to the physical world.

8th Grade

TLW be able to recognize, identify and classify geometric figures, lines, and angles as they relate to the physical world.

8.5.1 By the end of eighth grade, students will collect, construct, and interpret data displays and compute mean, median, and mode.

5th Grade

TLW read and interpret data from a picto, bar, line, and circle graph.

TLW read and interpret tables and charts.

6th Grade

TLW find the measurements of central tendencies using mean.

TLW make and read charts and graphs.

TLW collect and organize data.

7th Grade

TLW find the measurements of central tendencies using mean, mode, median, range.

TLW make and read charts and graphs.

TLW collect and organize data.

TLW find probabilities, permutations, and combinations.

8th Grade

TLW find the measurements of central tendencies using mean, mode, median, range.

TLW make and read charts and graphs.

TLW collect and organize data.

TLW find probabilities, permutations, and combinations.

8.5.2 By the end of eighth grade, students will read and interpret tables, charts, and graphs to make comparisons and predictions.

5th Grade

TLW read and interpret data from a picto, bar, line, and circle graph.

TLW read and interpret tables and charts.

6th Grade

TLW find the measurements of central tendencies using mean.

TLW make and read charts and graphs.

TLW collect and organize data.

7th Grade

TLW find the measurements of central tendencies using mean, mode, median, range.

TLW make and read charts and graphs.

TLW collect and organize data.

TLW find probabilities, permutations, and combinations.

8th Grade

TLW find the measurements of central tendencies using mean, mode, median, range.

TLW make and read charts and graphs.

TLW collect and organize data.

TLW find probabilities, permutations, and combinations.

8.5.3 By the end of eighth grade, students will conduct experiments or simulations to demonstrate theoretical probability and relative frequency.

5th Grade

6th Grade

TLW make and read charts and graphs.

TLW collect and organize data.

7th Grade

TLW make and read charts and graphs.

TLW collect and organize data.

TLW find probabilities, permutations, and combinations.

8th Grade

TLW make and read charts and graphs.

TLW collect and organize data.

TLW find probabilities, permutations, and combinations.

8.5.4 By the end of eighth grade, students will identify statistical methods and probability for making decisions.

5th Grade

TLW calculate averages of whole numbers up to three digits.

6th Grade

TLW find the measurements of central tendencies using mean.

TLW make and read charts and graphs.

TLW collect and organize data.

7th Grade

TLW find the measurements of central tendencies using mean, mode, median, range.

TLW make and read charts and graphs.

TLW collect and organize data.

TLW find probabilities, permutations, and combinations.

8th Grade

TLW find the measurements of central tendencies using mean, mode, median, range.

TLW make and read charts and graphs.

TLW collect and organize data.

TLW find probabilities, permutations, and combinations.

8.6.1 By the end of eighth grade, students will demonstrate knowledge and use of the one and two dimensional coordinate systems.

5th Grade

TLW identify and locate points using ordered pairs in the first quadrant.

6th Grade

7th Grade

TLW graph equations and inequalities on the number line and ordered pairs.

8th Grade

TLW graph equations and inequalities on the number line and ordered pairs.

8.6.2 By the end of eighth grade, students will apply algebraic concepts and operations to solve linear equations and word problems.

5th Grade

TLW use and interpret variables, mathematical symbols and properties to write and simplify expressions and sentences.

TLW solve for the single missing whole number.

6th Grade

TLW read and write algebraic expressions and equations.

TLW solve equations using whole numbers, decimals, fractions, and mixed numbers, Properties of addition, multiplication, identity.

TLW graph equations and inequalities on the number line and ordered pairs.

7th Grade

TLW read and write algebraic expressions and equations.

TLW solve equations using whole numbers, decimals, fractions, and mixed numbers, Properties of addition, multiplication, identity, order of operations and two step equations.

TLW graph equations and inequalities on the number line and ordered pairs.

8th Grade

TLW read and write algebraic expressions and equations.

TLW solve equations using whole numbers, decimals, fractions, and mixed numbers, integers, Properties of addition, multiplication, identity, order of operations and two step equations

TLW graph equations and inequalities on the number line and ordered pairs.

8.6.3 By the end of eighth grade, students will describe and represent relations, using tables, graphs, and rules.

5th Grade

TLW apply the function of the given rule to complete " in-put / out-put " table using whole numbers.

6th Grade

7th Grade

TLW graph equations and inequalities on the number line and ordered pairs.

8th Grade

TLW graph equations and inequalities on the number line and ordered pairs.