COURSE MAP –MATH 8

INTRODUCE

Mathematical skill	Conceptual Framework	Subset
Use scientific notation in making estimates	Number Sense	Estimation
Compute using scientific notation	Number Sense	Computation without Calculator
Calculate the value of a trigonometric expression with and without a calculator	Number Sense	Computation without Calculator
Recognize and use transitive property	Patterns & Functions	Relationship
Multiply and divide to simplify polynomial expressions	Patterns & Functions	Relationship
Solve multiple-step linear equations and inequalities	Patterns & Functions	Relationship
Solve quadratic or second degree equations by various methods (factoring, quadratic formula and graphing)	Patterns & Functions	Relationship
Apply and solve a system of linear equations by elimination, graphing and substitution methods	Patterns & Functions	Relationship
Determine the slope and intercepts of a line through a pair of given points	Patterns & Functions	Relationship
Recognize slope and y-intercept from a given linear equation	Patterns & Functions	Relationship
Recognize and describe exponential growth and decay	Patterns & Functions	Relationship
Recognize factoring patterns of first and second degree polynomials	Patterns & Functions	Relationship
Use dimensional analysis to find rates conversion factors	Patterns & Functions	Relationship
Construct and alter figures using transformational geometry	Geometry	Geometry
Recognize types of congruencies in proving triangles congruent	Geometry	Geometry
Use special right triangle relationships to find sides in a triangle	Geometry	Geometry
Use the counting principle to find the number of different arrangements of a group of terms	Probability	Chance
Recognize and calculate permutation and combination situations	Probability	Chance
Differentiate and select methods of data collection according to efficiency	Probability	Data Collection
Differentiate and select methods of data collection according to validity	Probability	Data Collection
Determine credibility of data using a variety of strategies	Statistics	Data Interpretation
Determine the arc length of a circle	Measurement	Types

COURSE MAP –MATH 8

INTRODUCE / DEVELOP

Mathematical skill	Conceptual Framework	Subset
Recognize and name irrational numbers	Number Sense	Number Sets
Recognize and use the properties to simplify a numeric or algebraic expression	Number Sense	Computation without Calculator
Solve for a variable in a formula with more than one step	Patterns & Functions	Relationship
Graph an inequality	Patterns & Functions	Relationship
Identify and recognize linear and non-linear relationships expressed in tables and graphs	Patterns & Functions	Relationship
Use the basic trigonometric ratios of sine, cosine and tangent to solve for sides and angles in a right triangle	Geometry	Geometry
Collect a random sample from a population	Probability	Data Collection
Measure/determine volume of other 3D figures	Measurement	Types
Use indirect measurement	Measurement	Types

DEVELOP

Mathematical skill	Conceptual Framework	Subset
Approximate an irrational number	Number Sense	Estimation
Write and evaluate square roots	Number Sense	Computation without Calculator
Write and evaluate powers, 0 and negative	Number Sense	Computation without Calculator
Name ordered pair values that are solutions to a linear equation and plot those values	Patterns & Functions	Relationship
Graph the line representing the solution of a linear equation	Patterns & Functions	Relationship
Use the Pythagorean theorem to find the length of any side in a right triangle	Geometry	Geometry
Use lengths and areas to determine theoretical geometric probability	Probability	Chance
Develop simulations to predict an event	Probability	Chance
Recognize and use representative samples	Probability	Data Collection
Scatterplot a data set in two variables and estimate a line to fit the data	Probability	Data Organization
Determine measures of variation (range, standard deviation and outliers of a data set) using technology as appropriate	Probability	Data Interpretation
Determine surface areas of prisms	Measurement	Types

COURSE MAP –MATH 8

DEVELOP / TEST

Mathematical skill	Conceptual Framework	Subset
Recognize and name rational numbers	Number Sense	Number Sets
Write numbers in scientific notation	Number Sense	Number Sets
Properties: distributive 3(2+4)= (3x2) + (3x4)	Number Sense	Number Theory
Use and determine percents including those greater than 100 and less than 1	Number Sense	Relationship
Recognize angle relationships	Number Sense	Relationship
Express sequences algebraically	Patterns & Functions	Number
Given an arithmetic or geometric sequence, find the nth term of the sequence	Patterns & Functions	Number
Recognize and use commutative, associative and distributive properties of addition and multiplication (numbers and variables)	Patterns & Functions	Relationship
Identify inverses and identities for addition and multiplication	Patterns & Functions	Relationship
Add and subtract to simplify polynomial expressions	Patterns & Functions	Relationship
Write linear equations and inequalities	Patterns & Functions	Relationship
Evaluate variable through numerical substitutions	Patterns & Functions	Relationship
Solve one step linear equations and inequalities	Patterns & Functions	Relationship
Solve two step linear equations and inequalities	Patterns & Functions	Relationship
Solve for a variable in a formula with one step	Patterns & Functions	Relationship
Use logical reasoning (inductive and deductive)	Patterns & Functions	Relationship
Identify and use relationships among parts of complex 2D and 3D figures (e.g.- parallel sides, congruent faces	Geometry	Geometry
Analyze transformations and relate properties to similarity and congruence (translation, rotation, reflection, and dilation)	Geometry	Geometry
Use ratio and proportion to determine the unknown sides of similar triangles	Geometry	Geometry
Identify and use properties of subsets of polygons	Geometry	Geometry
Design various methods to gather data	Probability	Data Collection
Use models/simulations to generate data	Probability	Data Collection
Select an appropriate method of displaying data (line, stem & leaf, box & whiskers)	Statistics	Data Organization
Recognize that data can be manipulated	Statistics	Data Interpretation
Determine the circumference of a circle	Measurement	Types
Use formula to find perimeter of common and complex figures	Measurement	Types
Determine area of circle, triangle, parallelograms and trapezoids	Measurement	Types
Determine area of an irregular figure	Measurement	Types
Determine angle measures using angle relationships	Measurement	Types

COURSE MAP –MATH 8

Calculate percent of change (sales tax, discounts, mark-up)	Measurement	Money
Classify angle pairs	Measurement	Angles
Determine the slope of a line	Measurement	Slope