CURRICULUM MAP – ALGEBRA 2

INTRODUCE

Mathematical skill	Conceptual Framework	Subset
Divide complex numbers	Number Sense	Computation without calculator
Calculate the limit of a sequence	Patterns and Functions	Number
Differentiate between skewed and normal distribution	Probability	Data Interpretation

INTRODUCE / DEVELOP

Mathematical skill	Conceptual Framework	Subset
Change complex numbers to their simplest form	Number Sense	Relationship
Add / subtract irrational numbers	Number Sense	Computation without calculator
Add / subtract complex numbers	Number Sense	Computation without calculator
Multiply irrational numbers	Number Sense	Computation without calculator
Multiply complex numbers	Number Sense	Computation without calculator
Determine the product of a scalar and a vector	Number Sense	Computation without calculator
Determine the scalar product of two vectors	Number Sense	Computation without calculator
Write and evaluate fractional exponents	Number Sense	Computation without calculator
Determine the value of a logarithmic expression with and without a calculator	Number Sense	Computation without calculator
Given a series, find the sum to the nth term in a series	Patterns and Functions	Number
Find the sum of an infinite series	Patterns and Functions	Number
Identify convergent and divergent sequences	Patterns and Functions	Number
Use graphing calculators to confirm conjectures about parent functions of cubic functions	Patterns and Functions	Number

CURRICULUM MAP – ALGEBRA 2

Use graphing calculators to confirm conjectures about parent functions of radical functions	Patterns and Functions	Number
Use graphing calculators to confirm conjectures about parent functions of exponential functions	Patterns and Functions	Number
Use graphing calculators to confirm conjectures about parent functions of logarithmic functions	Patterns and Functions	Number
Graph and describe the attributes of circular functions (sine, cosine, tangent, cosecant, secant, cotangent)	Patterns and Functions	Relationship
Graph ellipses	Patterns and Functions	Relationship
Graph hyperbolas	Patterns and Functions	Relationship
Name the equation of a cone when given facts about its intercepts, center, axis, lengths, or tangent line	Patterns and Functions	Relationship
Use graphing calculators to model and solve trigonometric and transcendental functions	Patterns and Functions	Relationship
Solve trigonometric identities to prove identities	Patterns and Functions	Relationship
Resolve vectors and find resultant vector using parallelogram of forces	Geometry	Geometry
Locate a point expressed in polar form in the polar coordinate system	Geometry	Geometry
Convert a point expressed in rectangular coordinates into its polar equivalent	Geometry	Geometry
Transform equations from polar into Cartesian	Geometry	Geometry
Determine if two vectors are parallel or perpendicular	Geometry	Geometry
Calculate trig ratio in radian measure	Geometry	Geometry
Use law of cosines and law of sines to solve triangles	Geometry	Geometry
Measure angles using radians	Measurement	Angles
Convert between degree and radian measure	Measurement	Angles
Identify customary value and co-ordinates of the unit circle in both degrees and radians	Measurement	Angles

CURRICULUM MAP – ALGEBRA 2

DEVELOP

Mathematical skill	Conceptual Framework	Subset
Use estimation in problem solving	Number Sense	Number Sets
Add/subtract vectors	Number Sense	Computation without calculator
Determine the magnitude of a vector	Number Sense	Computation without calculator
Divide irrational numbers	Number Sense	Computation without calculator
Solve quadratic or second degree equations by factoring, quadratic formula and graphing	Patterns and Functions	Number
Simplify rational expressions	Patterns and Functions	Relationship
Solve rational equations	Patterns and Functions	Relationship
Graph conics (circle, ellipse, parabola, hyperbola)	Patterns and Functions	Relationship
Graph circles	Patterns and Functions	Relationship
Use graphing calculator to model and solve real world problems	Patterns and Functions	Relationship
Locate an ordered triple in space coordinates	Geometry	Geometry
Use trigonometric ratios to model and solve real world problems	Geometry	Geometry
Determine the arc length of a circle	Measurement	Types
Recognize and determine the measure of a central angle	Measurement	Types
Calculate area of sector of circle	Measurement	Angles
Utilize problem solving strategies	Problem Solving	Problem Solving
Utilizes mental math	Problem Solving	Problem Solving

CURRICULUM MAP – ALGEBRA 2

DEVELOP / TEST

Mathematical skill	Conceptual Framework	Subset
Recognize and name irrational numbers	Number Sense	Number Sets
Recognize and name complex numbers	Number Sense	Number Sets
Change irrational numbers to their simplest form	Number Sense	Relationship
Write and evaluate square roots	Number Sense	Computation without calculator
Write and evaluate powers 0 and negative	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 the properties to simplify a numeric or algebraic expression	Number Sense	Computation without calculator
Determine the value of cube roots	Number Sense	Computation without calculator
Use scientific notation in problem solving	Number Sense	Computation without calculator
Use the rules of unions and intersections of sets to solve problems	Number Sense	Computation without calculator
Identify arithmetic and geometric sequence	Patterns and Functions	Number
Write and use formula to find the nth term of a sequence	Patterns and Functions	Number
Multiply and divide to simplify polynomial expressions	Patterns and Functions	Relationship
Expand polynomials	Patterns and Functions	Relationship
Recognize special products and factoring	Patterns and Functions	Relationship
Solve equations involving radicals	Patterns and Functions	Relationship
Use graphing calculator to solve polynomial functions	Patterns and Functions	Number
Apply and solve a system of linear equations by elimination, graphing, and substitution methods	Patterns and Functions	Number

CURRICULUM MAP – ALGEBRA 2

Solve problems by writing & graphing systems of inequalities	Patterns and Functions	Number
Use graphing calculators to solve systems of equations	Patterns and Functions	Number
Identify domain and range	Patterns and Functions	Number
Identify direct and indirect variations	Patterns and Functions	Number
Use graphing calculators to confirm conjectures about parent functions of lines	Patterns and Functions	Number
Use graphing calculators to confirm conjectures about parent functions of parabolas	Patterns and Functions	Number
Use graphing calculators to confirm conjectures about parent functions of absolute value functions	Patterns and Functions	Number
Recognize if a relation is a function	Patterns and Functions	Relationship
Determine the shape, position, and line of symmetry of a quadratic function	Patterns and Functions	Relationship
Recognize the pattern between a function and its translation	Patterns and Functions	Relationship
Graph parabolas	Patterns and Functions	Relationship
Simplify and solve logarithmic equations [I/D/T]	Patterns and Functions	Relationship
Construct and alter figures using transformational geometry	Geometry	Geometry
Locate an ordered triple in space coordinates	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
Develop simulations to predict an event	Probability	Chance
Recognize and use representative samples	Probability	Data Collection
Collect a random sample from a population	Probability	Data Collection
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
Use measures of central tendencies to model and solve real world problems	Probability	Data Interpretation

CURRICULUM MAP – ALGEBRA 2

Determine measures of variation (range, outliers of a data set) using technology as appropriate	Probability	Data Interpretation
Determine standard deviation of a data set using technology as appropriate	Probability	Data Interpretation
Determine credibility of data using a variety of strategies	Probability	Data Interpretation
Measure and determine surface area of other 3-D figures	Measurement	Types
Calculate simple and compound interest	Measurement	Money