

Obj.	Student & Parent	ILS Standards	Teacher Clarification	*Cycle	**Assessment	Strategies/Resources
L01	I can represent numbers in various notations.	<p>Representations and Ordering</p> <p>6.A Demonstrate knowledge and use of numbers and their representations in a broad range of theoretical and practical settings.</p> <p>***English Language Proficiency Standards <i>Grade Level Cluster 9-12</i> <i>3.Reading 1-5</i> <i>3.Writing 1-5</i> <i>3.Speaking 1-5</i> <i>3.Listening 1-5</i></p>	<p>I model and provide students with the opportunity to:</p> <ul style="list-style-type: none"> represent numbers in equivalent forms (e.g., exponential/logarithmic, radical/rational exponents), graph or interpret the graph of a complex number in rectangular and vector forms, and represent numerical intervals using correct notation. 	<p>Algebra 4 / Pre-Calc/Trig. 2nd Sem. Function</p> <p>Pre-Calc/Trig. 1st Sem. Algebra 3</p>	PSAE 11 th grade	<p>Staff Development</p> <p>Strategies/Resources</p>

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L02	I can use the relationships between numbers to solve problems.	<p>Computation, Operations, and Properties</p> <p>6.B Investigate, represent and solve problems using number facts, operations (addition, subtraction, multiplication, division) and their properties, algorithms and relationships.</p> <p>***English Language Proficiency Standards <i>Grade Level Cluster 9-12</i> <i>3.Reading 1-5</i> <i>3.Writing 1-5</i> <i>3.Speaking 1-5</i> <i>3.Listening 1-5</i></p>	<p>I model and provide students with the opportunity to:</p> <ul style="list-style-type: none"> compare and contrast the properties of number systems, including the complex numbers as solutions to quadratic equations, simplify expressions using the field properties, order properties, and properties of equality for the set of real numbers, use the field properties and properties of equality for the set of complex numbers, determine the opposite, reciprocal, absolute values, and positive integral powers of a complex number, identify, represent, and solve problems with numbers expressed in exponential, logarithmic, and scientific notations using technology, solve problems using exponents and logarithms, solve problems using complex numbers and their various representations, explain that vectors and matrices are systems that have some of the properties of the real-number system, solve problems using matrices, and develop fluency in operations with real numbers, vectors and matrices. 	<p>Algebra 3</p> <p>Algebra 3</p> <p>Algebra 3</p> <p>Algebra 3</p> <p>Algebra 4 / Pre-Calc/Trig. 2nd Sem.</p> <p>Algebra 4 / Pre-Calc/Trig. 2nd Sem.</p> <p>Algebra 4 / Pre-Calc/Trig. 2nd Sem.</p> <p>Pre-Calc Honors</p> <p>Algebra 3 / Pre-Calc Honors</p>	PSAE 11 th Grade	<p>Staff Development</p> <p>Strategies/Resources</p>

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L03	I can use various methods to arrive at an appropriate solution	<p>Computation, Operations and Estimation</p> <p>6.C Compute and estimate using mental mathematics, paper-and-pencil methods, calculators and computers.</p> <p>***<u>English Language Proficiency Standards</u> <i>Grade Level Cluster 9-12</i> 3. Reading 1-5 3. Writing 1-5 3. Speaking 1-5 3. Listening 1-5</p>	<p>I model and provide students with the opportunity to:</p> <ul style="list-style-type: none"> determine the level of accuracy needed for computations involving measurement and irrational numbers, use the correct number of digits in computation to achieve an appropriate unit or level of accuracy when solving problems, estimate an appropriate answer for a given term of a sequence, and describe the role of rounding error in calculations. 	<p>Algebra 4</p> <p>Pre-Calc/Trig. 2nd Sem.</p> <p>Algebra 4</p> <p>Algebra 4 / Pre-Calc/Trig. 2nd Sem.</p>	PSAE 11 th grade	<p>Staff Development</p> <p>Strategies/Resources</p>
L04	I can use ratios and proportions to solve problems.	<p>Ratios, Proportions, and Percents</p> <p>6.D Solve problems using comparison of quantities, ratios, proportions and percents.</p> <p>***<u>English Language Proficiency Standards</u> 3. Reading 1-5 3. Writing 1-5 3. Speaking 1-5 3. Listening 1-5</p>	<p>I model and provide students with the opportunity to:</p> <ul style="list-style-type: none"> explain the connection of percents to growth patterns, error, and probability, and set up and solve proportions for direct, inverse, and compound variations of quantities involving powers and multiple variables. 	<p>Algebra 4 / Pre-Calc/Trig. 2nd Sem.</p> <p>Algebra 4</p>	PSAE 11 th grade	<p>Staff Development</p> <p>Strategies/Resources</p>

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L05	I can use appropriate units and concepts between systems.	<p>Units, Tools, Estimation, and Applications</p> <p>7.A Measure and compare quantities using appropriate units, instruments and methods.</p> <p>***<u>English Language Proficiency Standards</u> Grade Level Cluster 9-12 3.Reading 1-5 3.Writing 1-5 3.Speaking 1-5 3.Listening 1-5</p>	<p>I model and provide students with the opportunity to:</p> <ul style="list-style-type: none"> convert angle measures between degrees and radians, and set up and solve measurement conversions using multiple rates and conversion factors. 	<p>Algebra 4 / Pre-Calc/Trig. 2nd Sem.</p> <p>Coordinate with the Science Dept.</p>	PSAE 11 th grade	<p>Staff Development</p> <p>Strategies/Resources</p>
L06	I can justify estimates.	<p>Units, Tools, Estimation, and Applications</p> <p>7.B Estimate measurements and determine acceptable levels of accuracy.</p> <p>***<u>English Language Proficiency Standards</u> Grade Level Cluster 9-12 3.Reading 1-5 3.Writing 1-5 3.Speaking 1-5 3.Listening 1-5</p>	<p>I model and provide students with the opportunity to:</p> <ul style="list-style-type: none"> analyze precision, accuracy, and approximate error in measurement situations, determine a reasonable estimate of measure for more complex problem situations, solve problems to a desired interval of accuracy, and apply informal concepts of successive approximation, upper and lower bounds, and limit in measurement situations. 	<p>Coordinate with the Science Dept.</p> <p>Algebra 4 / Pre-Calc/Trig. 2nd Sem.</p> <p>Algebra 4 / Pre-Calc/Trig. 2nd Sem.</p> <p>Pre-Calc/Trig. 2nd Sem.</p>	PSAE 11 th grade	<p>Staff Development</p> <p>Strategies/Resources</p>

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L07	I can convert between various measurement systems.	<p>Units, Tools, Estimation, and Applications</p> <p>7.C Select and use appropriate technology, instruments and formulas to solve problems, interpret results and communicate findings.</p> <p>***English Language Proficiency Standards <i>Grade Level Cluster 9-12</i> <i>3.Reading 1-5</i> <i>3.Writing 1-5</i> <i>3.Speaking 1-5</i> <i>3.Listening 1-5</i></p>	<p>I model and provide students with the opportunity to:</p> <ul style="list-style-type: none"> • solve practical problems using dimensional analysis, • determine how changes in one measurement affect the measures, and • concepts within and between measurement and monetary systems. 	<p>Coordinate with the Science Dept.</p> <p>Coordinate with the Science Dept.</p> <p>Coordinate with the Science Dept.</p>	PSAE 11 th grade	<p>Staff Development</p> <p>Strategies/Resources</p>

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L08	I can express, explain, and refine numerical and symbolic relationships.	<p>Representations, Patterns, and Expressions</p> <p>8.A Describe numerical relationships using variables and patterns.</p> <p>***<u>English Language Proficiency Standards</u> <i>Grade Level Cluster 9-12</i> <i>3.Reading 1-5</i> <i>3.Writing 1-5</i> <i>3.Speaking 1-5</i> <i>3.Listening 1-5</i></p>	<p>I model and provide students with the opportunity to:</p> <ul style="list-style-type: none"> generalize patterns using explicitly-defined and recursively-defined sequences, translate between explicit and recursive forms of sequences where possible, represent relationships arising from various contexts using symbolic expressions, including iterative and recursive forms, symbolize growth patterns using variables, explain the differences and similarities of different forms of growth formulas, describe the limiting process using numerical analysis, graphs, and algebra, and simplify algebraic expressions using exponential, logarithmic, and rational number techniques, including more advanced factoring. 	<p>Algebra 4 / Pre-Calc/Trig. 2nd Sem.</p> <p>Honors Pre-Calc/Trig. 2nd Sem.</p> <p>Honors Pre-Calc/Trig. 2nd Sem.</p> <p>Algebra 4/ Algebra 4 / Pre-Calc/Trig. 2nd Sem.</p> <p>Pre-Calc/Trig. 2nd Sem.</p> <p>Algebra 4 / Pre-Calc/Trig. 2nd Sem.</p>	PSAE 11 th grade	<p>Staff Development</p> <p>Strategies/Resources</p>

Obj.	Student & Parent	ILS Standards	Teacher Clarification	*Cycle	**Assessment	Strategies/Resources
L09	I can interpret, describe, and analyze numerical relationships using tables, graphs, and symbols.	<p>Connections Using Tables, Graphs, and Symbols</p> <p>8.B Interpret and describe numerical relationships using tables, graphs and symbols.</p> <p>***English Language Proficiency Standards <i>Grade Level Cluster 9-12</i> <i>3.Reading 1-5</i> <i>3.Writing 1-5</i> <i>3.Speaking 1-5</i> <i>3.Listening 1-5</i></p>	<p>I model and provide students with the opportunity to:</p> <ul style="list-style-type: none"> fit an equation to data using a calculator, interpret the overall relationship of two variables and connect it to one of the function families (linear, exponential, logarithmic or power) from a graph, relate the effect of transformations on graphs and equations, analyze functions by investigating domain, range, rates of change, intercepts, zeros, asymptotes, and local and global behavior, describe the properties and features of any non-degenerate conic section from an equation or graph, describe and perform transformations, such as arithmetically combining, composing, and inverting commonly used functions using technology, to perform operations on more complicated symbolic expressions, relate the situation to the graph and the function values for direct, inverse, and joint variations, relate functions to their inverses and their reflections over the line $y = x$, write an equation for conic sections from a graph, analyze functions and their graphs for symmetries, and use a variety of symbolic representations for functions and relations, including piecewise functions. 	<p>Pre-Calc/Trig. 2nd Sem. Algebra 4 / Pre-Calc/Trig. 2nd Sem.</p> <p>Pre-Calc/Trig. 2nd Sem. Pre-Calc/Trig. 1st Sem.</p> <p>Algebra 4 / Pre-Calc/Trig. 2nd Sem.</p> <p>Pre-Calc/Trig. 1st Sem.</p> <p>Algebra 4 / Pre-Calc/Trig. 2nd Sem.</p> <p>Algebra 4 / Pre-Calc/Trig. 2nd Sem.</p> <p>Algebra 4 / Pre-Calc/Trig. 2nd Sem.</p> <p>Algebra 4 Pre-Calc/Trig. 1st Sem.</p> <p>Pre-Calc/Trig. 2nd Sem.</p> <p>Pre-Calc/Trig. 2nd Sem.</p>	PSAE 11 th grade	<p>Staff Development</p> <p>Strategies/Resources</p>

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L10	I am able to identify, analyze, and model relationships using systems of numbers.	<p>Writing, Interpreting, and Solving Equations</p> <p>8.C Solve problems using systems of numbers and their properties.</p> <p>***English Language Proficiency Standards <i>Grade Level Cluster 9-12</i> 3. <i>Reading 1-5</i> 3. <i>Writing 1-5</i> 3. <i>Speaking 1-5</i> 3. <i>Listening 1-5</i></p>	<p>I model and provide students with the opportunity to:</p> <ul style="list-style-type: none"> describe and compare the properties of classes of functions, including exponential, polynomial, rational, logarithmic, and periodic functions, identify and explain the relationship between arithmetic/geometric sequences and linear/exponential functions, describe the relationship of a mathematical model of a problem to the real problem, apply sequences and their properties to solve real problems, model and solve real problems using mathematical functions and relations, identify essential quantitative relationships in a situation and determine the class or classes of functions (e.g., power, exponential, logarithmic) that might model the relationships, and explain and apply relationships of x, y, and t in parametric equations. 	<p>Algebra 4 / Pre-Calc/Trig. 2nd Sem.</p> <p>Algebra 4 / Pre-Calc/Trig. 2nd Sem.</p> <p>Pre-Calc/Trig. 2nd Sem.</p> <p>Algebra 4</p> <p>Algebra 4 / Pre-Calc/Trig. 2nd Sem.</p> <p>Algebra 4 / Pre-Calc/Trig. 2nd Sem.</p> <p>PreCalc Honors</p>	PSAE 11 th grade	<p>Staff Development</p> <p>Strategies/Resources</p>

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L11	I am able to represent and solve problems systematically.	<p>Writing, Interpreting, and Solving Equations</p> <p>8.D Use algebraic concepts and procedures to represent and solve problems.</p> <p>***English Language Proficiency Standards <i>Grade Level Cluster 9-12</i> 3. Reading 1-5 3. Writing 1-5 3. Speaking 1-5 3. Listening 1-5</p>	<p>I model and provide students with the opportunity to:</p> <ul style="list-style-type: none"> • solve problems using linear programming, • solve problems using equations of exponential and logarithmic growth, • solve problems using direct, inverse, and mixed variation, • apply solutions of real problems to similar situations with appropriate adaptation, • solve problems using rational equations and inequalities, and • set up and solve problems of non-linear growth. 	<p>Algebra 3</p> <p>Algebra 4/ Pre-Calc/Trig. 2nd Sem.</p> <p>Algebra 4</p> <p>Algebra 3-4 / Pre-Calc/Trig. 2nd Sem.</p> <p>Algebra 3 / Pre-Calc/Trig. 2nd Sem.</p> <p>Algebra 4 / Pre-Calc/Trig. 2nd Sem.</p>	PSAE 11 th grade	<p>Staff Development</p> <p>Strategies/Resources</p>
L12	I am able to interpret, analyze, and solve problems geometrically.	<p>Properties of Single Figures and Coordinate Geometry</p> <p>9.A Demonstrate and apply geometric concepts involving points, lines, planes and space.</p> <p>***English Language Proficiency Standards <i>Grade Level Cluster 9-12</i> 3. Reading 1-5 3. Writing 1-5 3. Speaking 1-5 3. Listening 1-5</p>	<p>I model and provide students with the opportunity to:</p> <ul style="list-style-type: none"> • analyze geometric situations using Cartesian coordinates and other coordinate systems such as navigational, polar, or spherical systems. • represent transformations of an object in the plane using function notation and matrices, • represent and describe with the language of geometry real-life objects, paths and regions in space, and • apply properties of two- and three-dimensional models to solve problems. 	<p>Algebra 4 Pre-Calc/Trig. 2nd Sem.</p>	PSAE 11 th grade	<p>Staff Development</p> <p>Strategies/Resources</p>

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L13	I am able to solve problems using relationships within and between figures.	<p>Relationships Between and Among Multiple Figures</p> <p>9.B Identify, describe, classify and compare relationships using points, lines, planes and solids.</p> <p>***<u>English Language Proficiency Standards</u> <i>Grade Level Cluster 9-12</i> <i>3.Reading 1-5</i> <i>3.Writing 1-5</i> <i>3.Speaking 1-5</i> <i>3.Listening 1-5</i></p>	<p>I model and provide students with the opportunity to:</p> <ul style="list-style-type: none"> • solve problems using relationships between and among figures, and • represent and describe with the language of geometry intersections and cross sections of three-dimensional objects. 	<p>Algebra 4 / Pre-Calc/Trig. 1st Sem.</p> <p>Pre-Calc/Trig. 1st Sem. Calculus</p>	PSAE 11 th grad	<p>Staff Development</p> <p>Strategies/Resources</p>
L14	I can develop formal and informal proofs.	<p>Justifications of Conjectures and Conclusions</p> <p>9.C Construct convincing arguments and proofs to solve problems.</p> <p>***<u>English Language Proficiency Standards</u> <i>Grade Level Cluster 9-12</i> <i>3.Reading 1-5</i> <i>3.Writing 1-5</i> <i>3.Speaking 1-5</i> <i>3.Listening 1-5</i></p>	<p>I model and provide students with the opportunity to:</p> <ul style="list-style-type: none"> • prove conjectures about geometric figures on the plane or in space using coordinate geometry, • extend the ideas of formal and informal proof to non-geometric situations, and • develop formal and informal proofs for three-dimensional figures. 	<p>Geometry Pre-Calc/Trig. 1st Sem.</p> <p>Pre-Calc/Trig. 1st Sem.</p> <p>Calculus</p>	PSAE 11 th grade	<p>Staff Development</p> <p>Strategies/Resources</p>

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L15	I can solve problems using trigonometry.	<p>Trigonometry</p> <p>9.D Use trigonometric ratios and circular functions to solve problems.</p> <p>***English Language Proficiency Standards <i>Grade Level Cluster 9-12</i> 3.Reading 1-5 3.Writing 1-5 3.Speaking 1-5 3.Listening 1-5</p>	<p>I model and provide students with the opportunity to:</p> <ul style="list-style-type: none"> • solve problems using the Laws of Sines and Law of Cosines, • relate vector representation and trigonometric functions, • solve problems using vectors, • relate circular functions, arcs, and radian measure to triangle trigonometry and degree measure, • simplify expressions and solve problems using trigonometric identities • solve trigonometric equations using circular functions, • rotate conic sections using trigonometric functions, • identify key characteristics of graphs of trigonometric functions and their inverses, • graph trigonometric functions using translations and dilations, and • graph a given trigonometric function using its characteristics (e.g., period, amplitude). 	<p>Pre-Calc/Trig. 1st Sem.</p> <p>Honors PreCalc</p> <p>Physics</p> <p>Pre-Calc/Trig. 1st Sem.</p> <p>Pre-Calc/Trig. 1st Sem.</p> <p>Pre-Calc/Trig. 1st Sem.</p> <p>Calculus</p> <p>Pre-Calc/Trig. 1st Sem.</p> <p>Pre-Calc/Trig. 1st Sem.</p> <p>Pre-Calc/Trig. 1st Sem.</p>	PSAE 11 th grade	<p>Staff Development</p> <p>Strategies/Resources</p>

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L16	I can describe, organize, model, and interpret data.	<p>Data Analysis and Statistics</p> <p>10.A Organize, describe and make predictions from existing data.</p> <p>***English Language Proficiency Standards <i>Grade Level Cluster 9-12</i> <i>3.Reading 1-5</i> <i>3.Writing 1-5</i> <i>3.Speaking 1-5</i> <i>3.Listening 1-5</i></p>	<p>I model and provide students with the opportunity to:</p> <ul style="list-style-type: none"> describe the differences among various kinds of studies and which types of inferences can legitimately be drawn from each, recognize how linear transformations of univariate data affect shape, center, and spread, describe how sample statistics reflect the values of population parameters and use sampling distributions as the basis for informal inference, present results and conclusions from given data using basic statistics (e.g., measures of central tendencies, standard deviation). interpolate, extrapolate, and make predictions from given information, and evaluate survey results for conformity to simple distributions. 	<p>Statistics</p> <p>Statistics</p> <p>Statistics</p> <p>Statistics</p> <p>Statistics</p> <p>Statistics</p>	PSAE 11 th grade	<p>Staff Development</p> <p>Strategies/Resources</p>

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L17	I can describe, analyze, and evaluate data.	<p>Data Analysis and Statistics</p> <p>10.B Formulate questions, design data collection methods, gather and analyze data and communicate findings.</p> <p>***English Language Proficiency Standards <i>Grade Level Cluster 9-12</i> <i>3.Reading 1-5</i> <i>3.Writing 1-5</i> <i>3.Speaking 1-5</i> <i>3.Listening 1-5</i></p>	<p>I model and provide students with the opportunity to:</p> <ul style="list-style-type: none"> • explore the variability of sample statistics from a known population and construct sampling distributions using simulations, • describe how sample statistics reflect the values of population parameters and use sampling distributions as the basis for informal inference, • create a survey from a critical question and decide which sampling technique to use for the survey, and • evaluate surveys for clarity, bias, return rate, and specialized audiences. 	<p>Statistics</p> <p>Statistics</p> <p>Statistics</p> <p>Statistics</p>	PSAE 11 th grade	<p>Staff Development</p> <p>Strategies/Resources</p>

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L18	I understand and can apply the properties of probability.	<p>Probability</p> <p>10.C Determine, describe, and apply the probabilities of events.</p> <p>***English Language Proficiency Standards <i>Grade Level Cluster 9-12</i> <i>3.Reading 1-5</i> <i>3.Writing 1-5</i> <i>3.Speaking 1-5</i> <i>3.Listening 1-5</i></p>	<p>I model and provide students with the opportunity to:</p> <ul style="list-style-type: none"> determine the theoretical probability for a chance event using the binomial probability model, describe the normal curve and use its properties to answer questions about sets of data that are assumed to be normally distributed, identify patterns from a sample space, describe a simulation for a more advanced experiment, carry out a simulation to estimate probabilities, and if possible, compare it to the theoretical probability, compute and interpret the expected value of random variables in simple cases, and apply advanced counting techniques to determine probability. 	<p>Statistics</p> <p>Statistics</p> <p>Statistics</p> <p>Statistics</p> <p>Statistics</p> <p>Statistics</p> <p>Statistics</p>	PSAE 11 th grade	<p>Staff Development</p> <p>Strategies/Resources</p>