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<p style="text-align: center;">Algebra II Framework for FORMATIVE/CLASSROOM Instruction and Assessment English language learners communicate information, ideas, and concepts necessary for academic success in the content area of MATHEMATICS.</p>								
<p>PA Academic Standard(s) Read, understand and respond to essential content of text and documents in all academic areas. 1.2.11.E. Listen critically and respond to others in small and large group situations 1.6.11.A. <ul style="list-style-type: none"> Respond with grade level appropriate questions, ideas, information, or opinions. Understand the concepts of exponential and logarithmic forms and use the inverse relationships between exponential and logarithmic expression to determine unknown quantities in equations. 2.1.A2.F. Make predictions based on lines of best fit or draw conclusions on the value of a variable in a population based on the results of a sample. 2.6.A2.E. Evaluate and simplify algebraic expressions; solve and graph, quadratic, exponential, and logarithmic equations; and, solve and graph systems of equations and inequalities. 2.8.A2.B. Recognize, describe and generalize patterns using sequences and series to predict long-term outcomes. 2.8.A2.C. Demonstrate an understanding and apply properties of functions (domain, range, inverses) and characteristics of families of functions (linear, polynomial, rational, exponential, logarithmic) 2.8.A2.D. Use combinations of symbols and numbers to create expressions, equations, and inequalities in two or more variables, systems of equations and inequalities, and functional relationships that model problem situations. 2.8.A2.E.</p>								
Listening								
Concepts	Competencies	Vocabulary	Level 1 Entering	Level 2 Beginning	Level 3 Developing	Level 4 Expanding	Level 5 Bridging	
Algebraic properties, processes and representations Exponential functions and equations Quadratic functions and equations Polynomial functions and equations Compound probabilities: addition and multiplication rules	Extend algebraic properties and processes to quadratic, exponential, and polynomial expressions and equations and to matrices, and apply them to solve real world problems. Represent exponential functions in multiple ways, including tables, graphs, equations, and contextual situations, and make connections among representations; relate the growth/decay rate of the associated exponential equation to each	Absolute value Central tendency Complex nos. Composite number Congruent Conjecture Converse Direct proof Domain Equation Equivalent forms Exponential function Exponential notation	Identify a math sentence provided orally as an equation or expression and as quadratic, linear, exponential or polynomial given criteria and verbal cues.	Anticipate a limitation on a domain or range based on the patterns given orally by teacher or peers. (e.g. Inputs: 4, 2, 1, 1/2, 1/4, 1/8...).	Decide whether scenarios explained verbally represent exponential, quadratic, or polynomial function.	Compare professional situations and determine which representation is best suited for the audience.	Follow verbal instructions in teams to simulate population growth in a grade-level experiment or project.	Level 6- Reaching

NEW

	<p>representation.</p> <p>Represent a quadratic function in multiple ways, including tables, graphs, equations, and contextual situations, and make connections among representations; relate the solution of the associated quadratic equation to each representation.</p> <p>Represent a polynomial function in multiple ways, including tables, graphs, equations, and contextual situations, and make connections among representations; relate the solution of the associated polynomial equation to each representation.</p> <p>Distinguish between independent and dependent events in order to calculate compound probabilities within real world situations.</p>	<p>Expression Interquartile Inverse Irrational number Linear function Line of best fit Logarithmic function Powers Prime Probability Proof by contradiction Range Rational numbers Reciprocal Scientific notation Systems of equations Transformation Trigonometric functions Variable Valid Argument</p>						
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Reading									
Concepts	Competencies	Vocabulary	Level 1 Entering	Level 2 Beginning	Level 3 Developing	Level 4 Expanding	Level 5 Bridging		
			Sort graphs as quadratic, linear, exponential, or polynomial based on their shape.	Observe the table of a function by scrolling and conclude the domain and range.	Match a graph, table, equation and contextual situation with a partner or group.	Draw conclusions from an irregular graph that combines function types and work backwards to identify a cause or reason for the changes.	Associate exponential functions with grade-level text and/or scientific experimentation. Analyze use of “exponentially” in literature and media.	Level 6- Reaching	
Content Stems									
			Quadratic equations Exponential functions Expressions, conjectures Problem solving Communicating mathematically Linear function	Communicate mathematically Linear function Domain & range Make predictions	Test Theories Recognize real-world applications	Engage in mathematical discourse Find and correct errors in mathematical thinking Synthesize content Valid argument	Work collaboratively making recommendations		
Instructional Support									
			Manipulatives Algebra tiles Picture dictionaries Visual aids when presenting new information	Manipulatives Algebra tiles Explain their thinking Infuse graphics with text Whiteboarding Pair-share	Model situations with sketches Write-think,-pair-share Explain peer’s work Sequence events/steps Explain answer with	Critique incorrect answers Solve problem two ways Support answer with calculator or	Becomes the expert Solve problems multiple ways Predict outcomes without calculating Debate solutions		

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				Graphic organizers Cooperative learning	calculator and written work Collaborative writing Whiteboarding	technology Talking to the text	Use technology to enhance problem solving
Language Use							
			<p>Listening Hear peer explanations Absorb short segments of information Understand clearly pronounced words/phrases Listen for key words (e.g. "squared" the "quantity")</p>	<p>Listening Follow oral or written directions with a partner Hear and process oral patterns in numbers and apply to domain and range</p>	<p>Listening Collaborative writing/ composition of mathematical texts Evaluate responses</p>	<p>Listening Score presentations Refute arguments Make valid arguments</p>	<p>Listening Formulate counter-points based on listening Work with peers to achieve a common goal</p>
			<p>Reading Peer groups read small problems/text Read overhead/ projected text</p>	<p>Reading Independently read short problems Read graphing calculator Read answers from peers</p>	<p>Reading Independently read problems and simple instructional text Use a graphic organizer to extract information Peer work</p>	<p>Reading Read multi-media text related to content Read and solve a scenario written by another student Read open-ended questions</p>	<p>Reading Read grade-level text related to content</p>