Transition to STEM Unit Rubrics

Polynomial Functions

Standard	4 - Mastery	3 - Proficient	2 - Basic	1- Below Basic	0 - No Evidence
CA-A1-A Understand the concept of a function and use function notation.	A. Apply composite function properties in an authentic task. AND A. Explain why an authentic task does not represent a function with explicit examples.	A. Use function notation to model a function from an authentic task. AND A. Explain why an authentic task represents a function with explicit examples.	A. Write the relationship in words, as expression, or an equation not using function notation. AND A. Explain why an authentic task represents a function without explicit examples.	A. Recognize *x* is the independent variable and *f(x)* is the dependent variable. AND A. Determine if a relation is a function	A. Not yet able to understand a function or use function notation.
CA-A1-B Interpret the dependent and independent variables in the context of functions.	B. Describe the relationship the dependent and independent variables have within an authentic task.	B. Identify and interpret the independent and dependent variables within an authentic task.	B. Identify the independent and dependent variable within an authentic task.	B. Identify the independent **or** dependent variable within an authentic task.	B. Not yet able to determine the independent or dependent variables within an authentic task.
CA-A1-C Create and interpret expressions for functions in terms of the situations they model including selecting appropriate domains for these functions.	C. Find and correct errors of functions which represent an authentic task. Explain errors and corrections. Defend function if no error exists.	C. Write and interpret functions representing an authentic task including stating appropriate domain.	C. Write functions representing an authentic task.	C. Identify the parts of a function given for an authentic task.	C. Not yet able to write and explain a function from an authentic task which includes stating appropriate domain.
CA-A1-D Understand the relationship between a function and its graph.	D. Describe key parts of the graph and the corresponding parts (or process to find) making connections to the equation of a function.	D. Describe the type of relationship between a function and its graph within an authentic task.	D. Match a function to a graph.	D. Identify key features of a graph.	D. Not yet able to explain the relationship between a function and its graph.
CA-A1-E Find the domain, including implied domains, and the range of a function.	E. Explain and defend the implied domain of a function from an authentic task.	E. Find the domains, implied domains, and ranges of functions within an authentic task.	E. Find the domains, implied domains, and ranges of functions using equations.	E. Find the domain and range of functions graphically.	E. Not yet able to find the domains, implied domains, and ranges of functions.
CA-A1-F Analyze functions using different representations (verbal, graphic, numeric, algebraic).	F. Justify the most appropriate representations of functions and defend interpretations within an authentic task.	F. From various representations, analyze and interpret a function within an authentic task.	F. From various representations, analyze and interpret a function.	F. From one representation, analyze a function (verbally, graphically, or algebraically).	F. Not yet able to analyze functions using different representations within an authentic task.
CA-A2-PF.H. Solve application problems and create models involving polynomial equations.	H. Find and correct errors with polynomial equations which represent an authentic task Explain errors and corrections. Justify process if no error is made.	H. Interpret solutions from a polynomial equation from an authentic task. AND H. Write a polynomial equation which represents an authentic task.	H. Solve a given polynomial equation from an authentic task.	H. Identify independent and dependent variables of an authentic task. AND H. Identify appropriate formulas needed.	H. Not yet able to write or interpret solutions of a polynomial equation from an authentic task.

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CA-A2-PF-I Factor quadratic polynomials over the rational numbers and identify prime/irreducible polynomials over the rational numbers.	I. Write a quadratic polynomial that can be factored or is prime, and justify.	I. Completely factor quadratic polynomials over the rational numbers and identify prime/irreducible polynomials over the rational numbers.	I. Factor quadratic polynomials with minor errors or that are not completely simplified.	I. Recall multiplication facts, factors, greatest common factor.	I. Not yet able to factor.
CA-A2-PF-J Apply standard factoring techniques to polynomials.	J. Find and correct errors when factoring a polynomial. Explain errors and corrections. Justify process if no errors exist.	J. Factor polynomials completely and verify the product of factors	J. Factor polynomials with minor errors or that are not completely simplified.	J. Recall multiplication facts, factors, greatest common factor.	J. Not yet able to factor.
CA-A2-PF.K. Solve quadratic equations by factoring, completing the square, and the Quadratic Formula.	K. Defend best method for solving a quadratic equation from an authentic task.	K. Demonstrate different methods of solving a quadratic equation from authentic tasks.	K. Demonstrate different methods of solving a quadratic equation.	K. Solve a quadratic equation using one method.	K. Not yet able to solve a quadratic equation by factoring, completing the square, and Quadratic formula.
CA-A2-PF.L. Graph quadratic functions and be able to determine the quadratic function from the graph. *Vertex, standard, and factored forms can be used.	L. Find and correct errors when graphing a quadratic function from an authentic task. Explain errors and corrections. Justify process if no errors exist.	L. Graph a quadratic function from an authentic task. AND L. Write the quadratic function from a graph in an authentic task.	L. Graph a quadratic function. AND L. Write a quadratic function given a graph.	L. Identify the features of a quadratic function. AND L. Identify the features of a quadratic function given a graph.	L. Not yet able to graph a quadratic equation and write a quadratic function from its graph.
CA-A2-PF.M. Understand the relationship between zeros and factors of a polynomial of degree 2 and higher.	M. Given imaginary or irrational zeros, write a possible polynomial function.	M. Explain the relationship between the factors and zeros of a polynomial function from an authentic task.	M. Explain the relationship between the factors and zeros of a polynomial function.	M. Identify the rational zeros of a factored polynomial. AND M. Given the rational zeros of a polynomial, write a possible polynomial function.	M. Not yet able to explain the relationship between factors and zeros of a polynomial function.
CA-A2-PF-N Solve polynomial equations and inequalities of degree 2 and higher.	N. Find and correct errors when solving a polynomial equation or inequality from an authentic task. Explain errors and corrections. Justify process if no error exists.	N. Solve a polynomial equation and inequality from an authentic task.	N. Solve a polynomial equation and inequality.	N. Factor and identify zeros of polynomials of degree 2 and higher. AND N. Evaluate a polynomial expression for a given input.	N. Not yet able to solve polynomial equation or inequality.