Course	Teacher	Project Title (with Link to Project)	Math Topics	Other Topics	Product Description	Comments	Student Work	
Algebra 1	Thompson/Giorgio	Create Your Own Snack: System of Inequalities	Linear inequalities, systems of equations, cartesian coordinate plane	Nutrition, business	Students created a business proposal to produce a snack with two food components.	This is challenging due to real life units. We used desmos to graph the inequalities because it would graph them in standard form.		
Algebra 1	Estey/Giorgio	A Pollster is You	Statistics	Polling	Students created surveys based on issues in the presidential campaign and presented their data visually.			
Algebra 1	Estey/Giorgio	Disproportionality	Proportions		Students researched proportions in order to answer their own questions about disproportionality.			
Algebra 1	Estey/Giorgio	A Story in 3 Equations	Linear equations	Creative writing	Students created stories to go along with linear equations that they created.			
Algebra 1	Estey/Giorgio/Thompson		Proportions	Art and storytelling	Students designed a mural and calculated scaled lengths and areas.			
Algebra 1	Estey/Giorgio/Thompson	Designing a Community Mural	Sequences and series		Students modeled real-life scenarios of growth or decay using sequences and series.			
Algebra 1	Estey/Giorgio/Thompson	Linear Equations + Sequences (BM)	Sequences and linear equations		Students extended their real-life scenarios related to sequences to linear equations.			
Algebra 1	Estey/Giorgio	Systems of Equations (Micro-Project)	Systems of equations		Students created linear equations about real-life scenarios and analyzed their intersections using systems of equations.			
Algebra 1	Estey/Giorgio	Systems of Alternative Energy Project	Systems of equations	Alternative energy sources	Students compared alternative energy sources with traditional methods by creating linear equations to model the scenarios.			
Algebra 1	Estey/Giorgio	Time to Teach!	All topics	Teaching	Students created review lessons for 4 lessons.	Can be used as standardized test prep or year-end review.		
Algebra 1	Thompson/Giorgio	Designing Your Own Dream House	Proportions	Architecture and interior design	Students designed the layout of a house together and each furnished one room. They used mathematical models of scale and ratios to calculate and draw the blueprint accurately.	We haven't used this in awhile because we got tired of blueprints (replaced with the mural project and then some election work).		
Algebra 1	Thompson/Giorgio	Calendar Mini-project	Pre-algebra		Students created a calendar month of problems to review different types of numbers and PEMDAS. Each problem's solution should match the day of the month.	This could be a nice intro project for letting younger students practice creating their own problems.		
Geometry	Thompson/Giorgio	Our Town	Pythagorean theorem, 2 column proofs, angle and line relationships	Town design	Students created maps of neighborhoods and then used math vocabulary to describe the layout of the streets and buildings.			
Geometry	Thompson/Giorgio	Chief Justifications	Inductive and deductive reasoning, paragraph proofs		Students created puzzles and then wrote justiciations for how to solve the puzzles that their peers created.			
Geometry		Geometry in your neighborhood						
Geometry	Thompson/Giorgio	Amateur Architect Contest	Volume and surface area	Architecture	Students designed buildings made up of 2 different shapes. Then they calculated the volume and surface area of their combined shape.	This project is easier than many to differentiate in terms of the level of challenge because the shapes chosen can vary from cubes to octagonal pyramids and irregular polygonal prisms.		
Geometry	Thompson/Giorgio	Geometry Designs	Area, perimeter, special quadrilaterals, parallel and perpendicular, linear equations, domain and range		Students created designs and then applied a hodge-podge of geometry and algebra review to describe their designs.	Could be used with piece-wise functions as well.		
Geometry	Thompson/Giorgio	How Tall is It?	Triangle congruence, similarity, and right triangle trigonometry		Students used a variety of ways to estimate the heights of tall buildings in the neighborhood using right triangles.	We use similar ideas now for investigations because this doesn't line up with the calendar anymore to use as a project (especially when it falls in the cold, rainy, and darker winter months).		
Algebra II	Latimer/Hernández	Business Plan	System of Linear Equations and Inequalities and Linear Programming	Business	Students created businesses that sell two different products. Then they wrote linear equations depending on their chosen constraints and optimized the financial outlook of the business.			
Algebra II	Latimer/Hernández	Build a Catapult	Quadratic Functions and Parametric Equations	Physics and Engineering	Students built catapults and modeled their motion using algebra. They scaled up the models in order to hypothetically hit a given target.			
Algebra II	Latimer/Hernández	Personal Financial Planning	Exponential Functions and Compound Interest	Finance	Students research future educational/professional/geographic plans for their partner and make a 10 year financial plan that includes savings, debt repayment, cost of living budgeting, and income predictions.			

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Algebra II	Latimer/Hernández	Art and Conic Sections	Conic Sections	2D and 3D Art	Students work in groups of four to create an art portfolio based on conic sections. Additonally, they create a 3D art piece based on conics using K'nex.			
Pre-Calculus	Reddy	Exponential Growth of Bacteria Cells & Decay via Antibiotic Effectiveness	Exponential growth and decay	Biology	Students modeled existing bacteria growth using exponential growth and decay as well as creating their own fictional scenarios.			
Pre-Calculus	Reddy	Modelling Real World Data Requiring a Piecewise Function	Piecewise Functions	Varied use of function families: constant, linear, quadratic, higher-order polynomials, exponentials, logarithmic	Students created real-life scenarios that can be modeled using piecewise functions and then created a video detailing the story and the math behind it.			
Pre-Calculus	Reddy	Modelling Sunset Times with Transformations of Sinusoidal Functions	Modeling with periodic data	Transformations of functions	Students modeled sunset time in a city over the course of 2 years using a trig function.			
Pre-Calculus	Reddy	Trigonometric Live Derive	Trigonometric identities & proofs		Students researched proofs of trig identities and then prepared for an oral description of said proof and given example problems 1:1 with the teacher.			
Statistics	Bushnell	How to Lie with Statistics	Exploring Categorical/ Quantitative Data	History/ Politics	Students both found, created, and analyzed misleading graphs based on the presidential election.			
Statistics	Bushnell	Which City has the Best Teams	Assessing Normality/ Describing Location within a Distribution	Sports Analysis	Students compared sports teams within cities using statitistics to analyze data distribution.			
Foundations	Estey	Disproportionality Mini-Project	Ratios & Proportions	Social Justice	Choose an issue and determine if it disproportionately affects one group over others			
Foundations	Estey	Cooking With Equations	Proportions, Equations	Cooking	Scale a recipe up, down, and to 1 serving, and predict the new cook times	Would have worked better assessing proportions than equations		
Foundations	Estey	The Compendious Book... vol. 2	Linear Equations & Inequalities, Literal Equations	Daily Life, History	write 3 chapters in a new "Compendious Book" about using algebra in daily life			
Foundations	Estey	GRAPH-ic Design	Graphing linear equations & inequalities, Domain & Range	Art	Create a design using linear equations & inequalities. Make your math match a paper design, as well as a computer design.			
Calculus	Latimer	Calculus 1 Study Guide	All topics		Students researched their future calculus 1 courses for college and then wrote themselves a study guide to highlight what they learned throughout the year.			
Calculus	Latimer	Applications of Derivatives	Derivatives		Students researched real-life scenarios that can be modeled using different types of functions. Then they wrote questions and analyzed the scenarios using derivatives.			
Calculus	Latimer	Approximating/Finding Areas Under a Curve	Antiderivative, approximating area under a curve		Students found and analyzed data about a real-life scenario and approximated the area under the curve.		Example 1	Example 2