

SUBJECT	Algebra I	Geometry	Math of Models	Algebra II	Pre-Calculus
Ideas students are learning	Students will learn the laws of exponents and apply those laws to operations with polynomials, quadratic functions and connect these concepts to find area,	Students will learn how to describe the effect on perimeter, area, and volume when one or more dimensions of a figure are changed and apply this idea	Students will learn about linear systems of equations and study multiple methods for solving systems of equations.	Students will review radical functions and analyze various representations of rational functions with respect to problem situations.	Students will solve problems connecting trigonometric relationships to the geometry of right and oblique (non-right) triangles, unit circles, and apply the Laws of Sines and Cosines
Skills	Students will use different methods to multiply and factor polynomials and determine what causes a quadratic function to shift up and down on a coordinate	Students will select and apply appropriate formulas and geometric reasoning to find surface areas and volumes of prisms, pyramids, spheres, cones,	Students will be able to formulate and solve systems of equations using various methods including: substitution, graphing the equations (with and without technology), and by studying a	Students will be able to determine the solutions of rational equations using graphs, tables, and algebraic methods as well as analyze a situation modeled by a rational	Students will recognize appropriate uses of the Law of Sines and/or the Law of Cosines. Apply these to solve a variety of problems and determine the area of oblique
Work and assignments to look for	Look for work that asks students to apply their knowledge of the different methods of multiplication and factoring of polynomials as well as work where	Look for work where students are measuring 2-D and 3-D figures from models and nets and finding the perimeter, area, and volume of these figures by utilizing	Look for work that asks students to apply their knowledge of systems of linear functions in problem-solving situations, including "A Tale of Two Truckers."	Students will complete 3 separate "module" assessments to gauge their progress in acquiring these new concepts.	Look for work that asks students to use right triangle trigonometry, the Law of Sines, and the Law of Cosines.
Questions Parents Can Ask	Ask your student how they can use a graphing calculator to find a trinomial that is equivalent to a given product of binomials. Ask your student what makes	Ask your student to explain how the area and volume of 3-D figures are similar and how they are different.	How can you determine a solution for a system of linear equations from a graph? What does it mean if the graph of a system of linear functions results in parallel lines?	How are rational functions used to solve real-world problems? In what ways do rational functions that vary directly and inversely model and then solve real problems?	Ask your student how are sine and cosine defined for right triangles. Also, what is the relationship between the Pythagorean Theorem and the unit circle?
Special Notes	The "box method" is a method of multiplying two binomials using a graphic organizer. Many students prefer this method over the traditional F.O.I.L. (First,	Nets of 3-D figures are diagrams used to represent a 2-dimensional view of a solid shape or a pattern that you can cut and fold to make a model of a solid shape.	Systems of equations are problems that can be solved using two separate equations containing common variables.	A rational function is a fractional format of two polynomials.	Sine, cosine and tangent are defined as ratios of sides of right triangles.