At Missouri School for the Blind we believe student success is our first and foremost responsibility. We further believe, that every student learns in an individual way and at an individual rate, therefore, Missouri School for the Blind differentiates instruction to meet the needs of each learner. For student's whose educational program centers on the Show-Me-Standards, as defined in the Grade-Level-Expectations (GLE), curriculum-based and on-going assessment, determine instructional methods, remediation, enrichment, and pacing through the curriculum. The GLE's are designed to meet a wide range of students needs; however, each course may be further differentiated through the IEP process to meet individual student needs. To identify the objectives associated with a specific course, please contact the assigned instructor or the curriculum supervisor.

Missouri School for the Blind

Math

Graded High School Curriculum

MSB

Algebra I

By the end of Algebra I (usually 9th Grade) students will be able to:

- Compare and order rational and irrational numbers including finding their approximate locations on a number line.
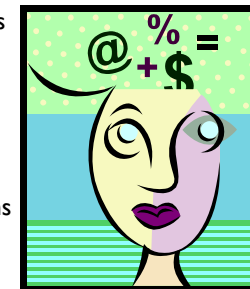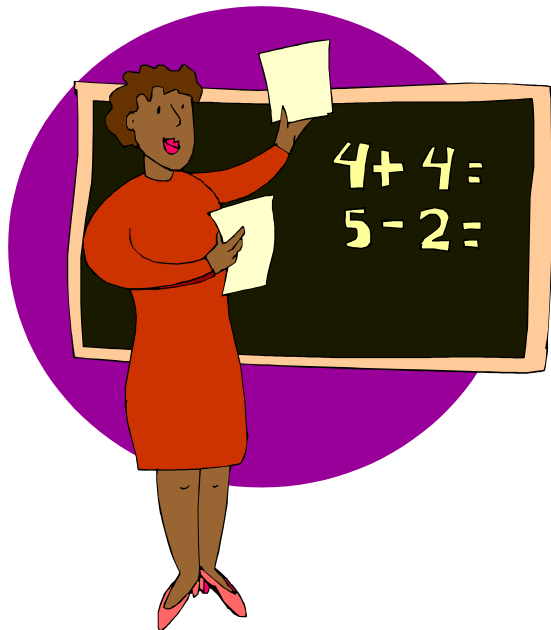- Describe the effects of operations such as multiplication, division and computing powers and roots on the magnitude of quantities.
- Apply properties of exponents – including order of operations -- to simplify expressions.
- Apply operations to real numbers using mental computation or paper and pencil calculations for simple cases and technology for more complicated pieces, e.g. calculator.
- Apply all operations on real numbers.
- Judge the reasonableness of numerical computations and their results.
- Solve problems involving proportions.
- Generalize patterns using explicitly or recursively defined functions.
- Compare and contrast various forms of representations of patterns.
- Understand and compare the properties of linear and exponential function – include intercepts.
- Describe the effects of parameter changes on linear functions.
- Use symbolic algebra to represent and solve problems that involve linear relationships including absolute value and recursive relationships.
- Describe and use algebraic manipulations including factoring and rules of integer exponents.
- Use and solve equivalent forms of equations and inequalities.
- Use and solve systems of linear equations with two variables.
- Identify quantitative relationships and determining the types of functions that might model the situation to solve the problem.

- Analyze linear functions by investigating rates of change and intercepts.
- Solve problems involving angle relationships – supplementary, complementary angles, and Pythagorean Theorem.
- Apply geometric properties and relationships such as similarity to solve multi-step problems in two dimensions.
- Solve problems related to two-dimensional objects by finding the distance on a Cartesian plane.
- Represent translations, reflections, rotations and dilations of objects in the coordinate plane.
- Translate and reflect linear functions.
- Draw and use vertex – edge graphs or networks to find optimal solutions.
- Draw or use visual models to represent and solve problems.
- Identify and justify appropriate units of measure for velocity.
- Solve problems of angle measure including those involving triangles or other polygons.
- Determine the surface area and volume of geometric figures including cones, spheres and cylinders.
- Analyze the effects of computation on precision.
- Use unit analysis to solve problems involving rate.
- Formulate questions, design studies and collect data about a characteristic.
- Select create and use appropriate graphical representations of data.
  - Apply statistical concepts to solve problems.
  - Given one variable quantitative data, display the distribution and describe its shape.
  - Given a scatter plot, determine an equation for a line of best fit.
  - Make conjectures about possible relationships between two characteristics of a sample on the basis of scatter plots of the data and approximate lines to fit.
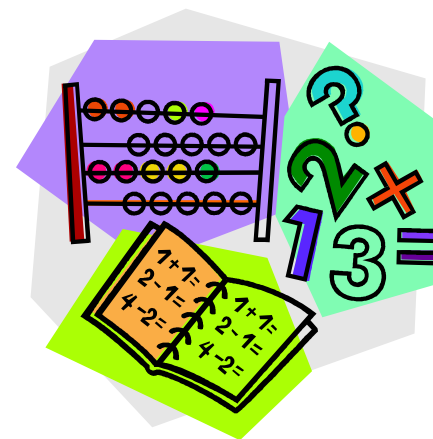- Construct sample spaces and distributions.

- Generalize patterns using explicitly or recursively defined functions.
- Compare and contrast various forms of representations of patterns.
- Understand and compare the properties of linear exponential and quadratic functions – include domain and range.
- Describe the effects of parameter changes on quadratic and exponential functions.
- Use symbolic algebra to represent and solve problems that involve quadratic relationships including recursive relationships.
- Describe and use algebraic manipulations including

Algebra II

By the end of Algebra II (Usually 10th grade) students will be able to:

- Use real numbers to solve problems.
- Use a variety of representations to demonstrate an understanding of very large and very small numbers.
- Apply properties of exponents to simplify expressions or solve equations.
- Apply operations to real numbers using mental computation or paper and pencil calculations for simple cases and technology for more complicated cases.
- Judge the reasonableness of numerical computations and their results.
- Solve problems involving proportions.

- inequalities – polynomials and trigonometric.
- Use and solve systems of equations or inequalities.
- Identify quantitative relationships and determine the types of functions that might model the situation to solve the problem – including recursive forms.
- Analyze rational polynomial and periodic functions by investigating rates of change, intercepts and asymptotes.
- Use trigonometric relationships to determine lengths and angle measures in all types of triangles.
- Use Cartesian coordinates and other coordinate systems to analyze geometric situations such as navigational, polar or spherical systems.
- Determine the final outcome of successive transformations using various methods. [i.e. sketches, constructions and matrices.]
- Perform simple transformations and their compositions on linear, quadratic, logarithmic, exponential, rational, and periodic functions. Recognize three-dimensional objects and spaces from different perspective and analyze their cross-sections.
- Draw or use visual models to represent and solve problems.
- Compare and contrast between angle and radian measure.
- Apply concepts of successive approximation, upper and lower bounds, and limit and measurement situations.

- Use unit analysis to solve problems involving rates such as circular velocity, acceleration, or flow rates.
- Formulate questions, designing studies and collecting data about a characteristic.
- Describe differences among various studies and which types of inferences can legitimately be drawn from each.
- Apply statistical concepts to solve problems and distinguish between a statistic and a parameter
- Recognize how linear transformations of single variable data effect shape, center and spread.
- Create a scatter plot describes its shape, determine and analyze regression equations using technological tools.
- Evaluate published reports that are based on data by examining the design of the study, the appropriateness of the data analysis and the validity of conclusions.
- Describe how basic statistical techniques are used in the work place.
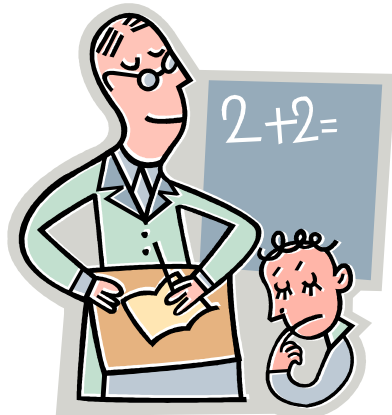- Use simulations to construct empirical probability distributions.

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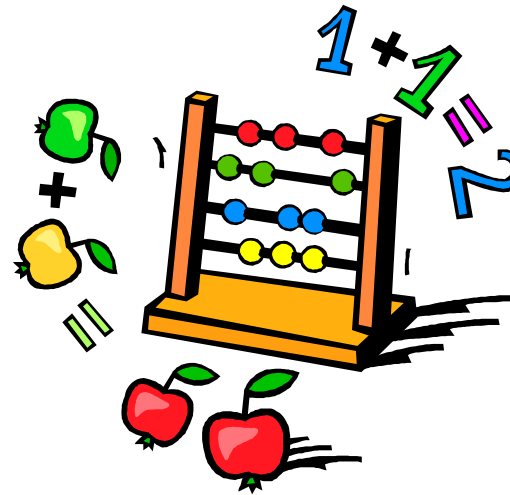
- Describe how basic statistical techniques are used in the work place.
- Use simulations to construct empirical probability distributions.

Trigonometry
By the end of Trigonometry (Usually 12th grade) Mathematics, students will be able to:

- Use vectors and matrices as systems and compare their properties to the real number system.
- Apply properties of functions to simplify expressions or solve equations.
- Apply operations to vectors using mental computation or paper and pencil calculations for simple cases and technology for more complicated cases.
- Judge the reasonableness of numerical computations and their results.
- Solve problems involving proportions.
- Generalize patterns using explicitly or recursively defined functions.
- Compare and contrast various forms of representations of patterns.
- Understand and compare the properties of exponential polynomial rational and logarithmic and periodic functions.
- Describe the effects of parameter changes on polynomial and periodic function.

- factoring and rules of integer exponents.
- Use and solve equivalent forms of equations and inequalities – piece-wise and quadratic.
- Use and solve systems of linear equations or inequalities with two variables.
- Identify quantitative relationships and determining the types of functions that might model the situation to solve the problem.
- Analyze quadratic functions by investigating rates of change, intercepts, and zeros.
- Use inductive and deductive reasoning to establish the validity of geometric conjectures, prove theorems and critic arguments made by others.
- Apply relationships among surface areas and among volumes of similar objects.
- Make conjectures and solving problems involving two-dimensional objects represented with Cartesian coordinates.
- Use and apply constructions to represent translations, reflections, rotations and dilations of objects.
- Translate, dilate and reflect quadratic and exponential functions.
- Identify types of symmetry of two-dimensional and three-dimensional figures.
- Draw representations of three-dimensional geometric objects using a variety of tools.

- Draw or use visual models to represent and solve problems.
- Solve problems of angle measure of parallel lines cut by a transversal.
- Determine the surface area and volume of geometric figures including cones, spheres, and cylinders.
- Analyzing effects of computation on precision.
- Formulate questions, design studies and collect data about a characteristic.
- Select, create, and use appropriate graphic representation of data.
- Apply statistical concepts to solve problems and distinguish between a statistic and a parameter.
- Give one variable quantitative data, display the distribution and describe its shape.
- Display and analyze bivariate data where one variable is categorical and the other is numerical.
- Describe how sample statistics reflect the values of population parameters and use sampling distributions as the basis for informal inference.
- Describe the concepts of sample space and probability distribution.
- Use and describe the concepts of conditional probability and independent events.

Geometry

By the end of Geometry (usually 11th grade) Mathematics, students will be able to:

- Apply properties of logarithms to simplify expressions or solve equations.
- Apply operations of matrices and complex numbers using mental computation or paper and pencil calculations for simple cases and technology for more complicated cases.
- Judge the reasonableness of numerical computations and their results.
- Solve problems involving proportions.
- Generalize patterns using explicitly or recursively defined functions.
- Compare and contrast various forms of representations of patterns.
- Understand and compare the properties of linear quadratic exponential logarithmic and rational functions – include asymptotes. Describe the effect of parameter changes on logarithmic and exponential functions.
- Use symbolic algebra to represent and solve problems that involve exponential and logarithmic relationships, including recursive and parametric relationships.
- Describe and use algebraic manipulations including inverse functions, compositions of functions and rules of exponents.
- Use and solve equivalent forms of equations and inequalities – exponential, logarithmic, and rational.
- Use and solve systems of linear and quadratic equations or inequalities with two variables.
- Identify quantitative relationships and determine the types of functions that might model the situation to solve the problem – including recursive forms.
- Analyze exponential and logarithmic functions by investigating rates of change, intercepts and asymptotes.

- Use trigonometric relationships with right triangles to determine lengths and angle measures.
- Determine the effect of surface area or volume of changing one measurement.
- Use vectors to represent and analyze problems involving velocity and direction.
- Use and apply matrices to represent translations, reflections, rotations, and dilations.
- Perform simple transformations and their compositions on linear quadratic logarithmic and exponential functions.
- Draw representations of three-dimensional geometric objects from different perspectives using a variety of tools.
- Draw or use visual models to represent and solve problems.
- Compare and contrast intensity levels within a system of measure – decibels, ph.
- Apply concepts of successive approximation.
- Use unit analysis to solve problems involving rates such as speed, density or population density.
- Formulate questions, design studies and collect data about a characteristic.
- Describe the characteristics of well-designed studies including the role of randomization in survey and experimental research.
- Apply statistical concepts to solve problems and distinguishing between a statistic and a parameter.
- Given one variable quantitative data, display the distribution, describe its shape and calculate summary statistics.
- Given a scatter plot determines a type of function that models the data.
  - Use simulations to describe the variability of sample statistics from a known population and to construct sampling distributions.
  - Compute and interprets the expected value of random variables.
  - Use and describe how to compute the probability of a compound event.

Advanced Algebra

By the end of Advanced Algebra (Usually 12th grade) Mathematics, students will be able to:

- Use vectors and matrices as systems and compare their properties to the real number system.
- Apply properties of functions to simplify expressions or solve equations.
- Apply operations to vectors using mental computation or paper and pencil calculations for simple cases and technology for more complicated cases.
- Judge the reasonableness of numerical computations and their results.
- Solve problems involving proportions.
- Generalize patterns using explicitly or recursively defined functions.
- Compare and contrast various forms of representations of patterns.
- Understand and compare the properties of exponential polynomial rational and logarithmic and periodic functions.
- Describe the effects of parameter changes on polynomial and periodic function.
- Use symbolic algebra to represent and solving problems that involve periodic relationships including recursive and parametric relationships.
- Describe and use algebraic manipulations including inverse of functions, composition of functions.

- Use and solve equivalent forms of equations and inequalities – polynomials and trigonometric.
- Use and solve systems of equations or inequalities.
- Identify quantitative relationships and determine the types of functions that might model the situation to solve the problem – including recursive forms.
- Analyze rational polynomial and periodic functions by investigating rates of change, intercepts and asymptotes.
- Use trigonometric relationships to determine lengths and angle measures in all types of triangles.
- Use Cartesian coordinates and other coordinate systems to analyze geometric situations such as navigational, polar or spherical systems.
- Determine the final outcome of successive transformations using various methods (i.e. sketches, constructions and matrices).
- Perform simple transformations and their compositions on linear, quadratic, logarithmic, exponential, rational, and periodic functions. Recognize three-dimensional objects and spaces from different perspective and analyze their cross-sections.