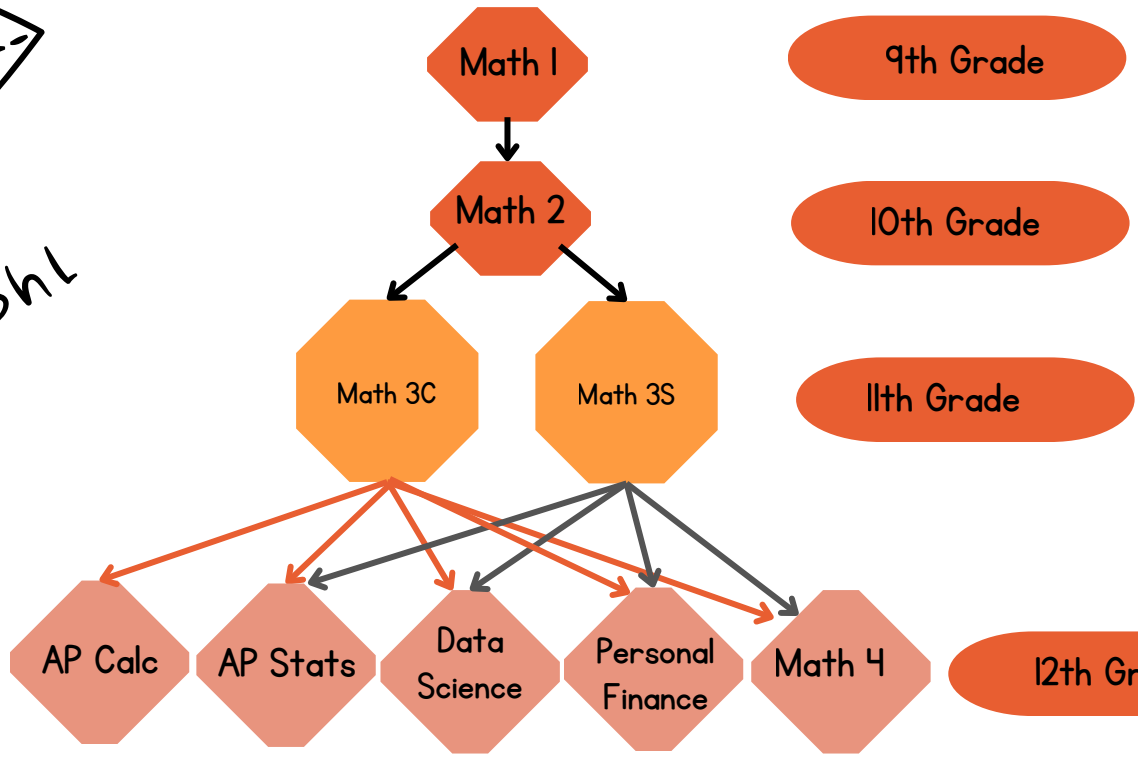
EUHSD Math Info for incoming 9th Graders

At EUHSD, we provide a four-year pathway in mathematics to ensure that all students receive the highest-quality, rigorous math program which will prepare them for their post-high school future!

Our Integrated math program gives the best possible high school education with **four years** of mathematics. Choices in math classes available to students come after getting a foundation in four math strands (Discrete Mathematical Modeling, Algebra & Functions, Geometry & Trigonometry, Statistics and Probability) to ensure all students are well-rounded in their mathematical prowess before engaging in more specialized mathematics courses such as Data Science, AP Statistics, and AP Calculus.

Attention Class of 2030!
Did you know that EUHSD now requires AT LEAST 3 years of math to graduate from high school?

The following flowchart shows the many pathways available to EUHSD students.*
More explanation of these pathways will happen at the end of your 10th grade year.



*DLA pathway is not included in this flowchart. See DLA website for Mathematics pathway

Math Acceleration Opportunities**

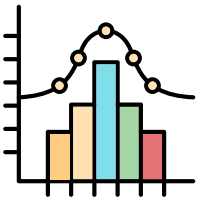
For students who would like the opportunity to accelerate in mathematics there are two ways to do so.

Math 1 Exemption Test - Students who score at the 10th grade level or above in iReady will be invited by EUHSD to take a Math 1 Exemption Test. If the student passes, that student may take Math 2 in 9th grade.

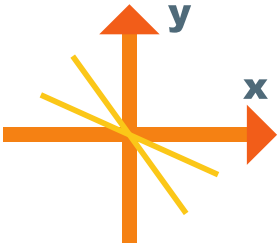
Math 1 Accelerated Summer Course - Students who do not pass the Math 1 Exemption Test may take the Summer Math 1 Accelerated course in order to complete Math 1 credits the summer before 9th grade. More information on this course will be coming to your middle school by early May.

**EHS, SPHS, OGHS, and OGHS Middle College students only

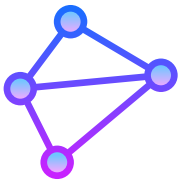
The Following concepts are learned in Math I



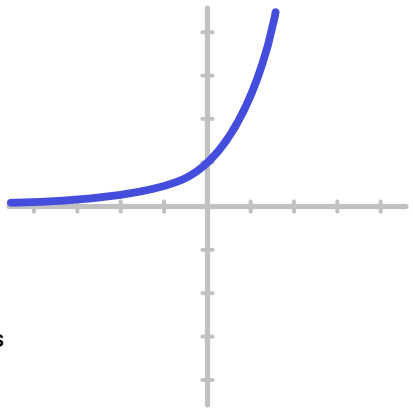
- Patterns in Data
  - Univariate Graphs (Boxplots, Histograms, etc.)
  - Measures of Center (Mean, Median, & Mode)
  - Measures of Variability (Range, IQR, Standard Deviation)



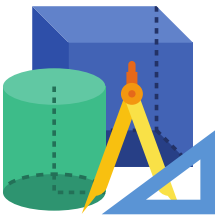
- Linear Functions
  - Describing Linear Functions with graphs, tables, and equations
  - Understanding and finding Slope and y-intercept
  - Write an equation for a linear function given graph, table, or two points
  - Writing Linear Equations and Inequalities from a real-world context
  - Solving Linear Equations
  - Use tables, graphs, and algebra to solve systems of linear equations
  - Write linear equations in equivalent forms by expanding, combining like terms, and factoring



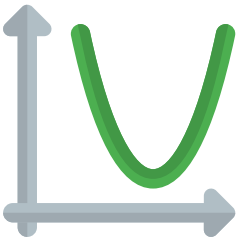
- Discrete Math Modeling
  - Use Vertex-Edge Graphs to model efficient routes
  - Use Euler Circuits to help solve efficient route problems
  - Use Matrices to represent and analyze graphs



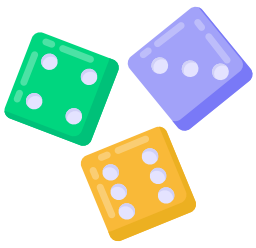
- Exponential Functions
  - Develop understanding of Exponential Growth in real-world phenomenon
  - Represent exponential functions in the form $y = a(b^x)$
  - Use tables and graphs to solve problems about exponential growth
  - Use standard rules for writing exponential expressions in equivalent forms
  - Develop understanding of Exponential Decay in real-world phenomenon
  - Interpret zero and fractional exponents and calculate values using them
  - Interpret half-life decay phenomena
  - Use tables and graphs to solve problems about exponential decay
  - Use properties of exponents for writing exponential expressions in equivalent forms
  - Simplify radicals



- Patterns in Shape
  - Discover and apply properties of triangles and quadrilaterals
  - Discover and verify combinations of side and angle conditions for triangle congruence (SSS, etc.)
  - Use triangle congruence conditions to reason about triangles and quadrilaterals
  - Justify why Pythagorean Theorem and its converse are true
  - Discover and apply properties of the interior, exterior, and central angles of polygons
  - Recognize and describe line and rotational symmetries of polygons
  - Discover which triangles, quadrilaterals, and regular polygons will tile a plane and explore tessellations
  - Identify and describe important characteristics of common three-dimensional shapes including prisms, pyramids, cones, and cylinders
  - Find surface area and volume of three-dimensional shapes



- Quadratic Patterns
  - Determine patterns associated with quadratic functions using graphs, tables, and equations
  - Understand the symmetry of parabolas and name their parts (max, min, zeroes, etc.)
  - Describe the effects of each parameter in the function rule $y = ax^2 + bx + c$
  - Manipulate and simplify quadratic expressions (expanding and factoring)
  - Write quadratic equations and inequalities to represent real-world scenarios
  - Find solutions to quadratic equations using tables, graphs, factoring, and the quadratic formula



- Patterns in Chance
  - Construct Probability Distributions and Sample Spaces
  - Identify mutually exclusive events
  - Calculate probabilities of both inclusive and mutually exclusive events
  - Use the Law of Large Numbers to understand situations involving chance
  - Use random number generators to perform simulations
  - Use area models to represent probability problems