MATHEMATICS

This flowchart shows options for Mathematics courses from middle school to high school graduation. Three credits of Math are required for graduation from high school in Minnesota. Students must complete Intermediate Algebra, Geometry, Algebra 2 or its equivalent as part of the three (3) credit requirements. For requirements for entrance to postsecondary schools, consult the institution of choice. For students with Individualized Education Plans (IEPs) and in credit recovery programs, contact your high school counselor and/or case manager for further information.

8th Grade	9th Grade	10th Grade	11th Grade	12th Grade
Intermediate Algebra	Geometry 9	Algebra 2	CITS Precalculus (prerequisite for AP Calculus) Or Probability and Statistics	AP Calculus Or Precalculus

Or

9th Grade	10th Grade	11th Grade	12th Grade
Intermediate Algebra	Geometry	Algebra 2 Or Algebra 2 Concepts	Precalculus Or Probability and Statistics

M071000 Math 6
Grade 6
(Required - Full Year)
Students will solve real-world and mathematical problems by:
- Understanding the concept of ratio and its relationship to fractions and whole number multiplication and division
- Understanding and performing calculations with positive rational numbers
- Representing relationships between varying quantities with tables, graphs, and rules and translating between them
- Using properties of arithmetic to generate equivalent numerical expressions and evaluating expressions involving positive rational numbers
- Using equations and inequalities to represent problems involving positive rational numbers
- Calculating measurements (perimeter, area, surface area and volume) of two and three-dimensional shapes
- Choosing appropriate units of measurement and using ratios to convert within measurement systems
- Using fractions, decimals, and percents to represent probabilities

M072000 Math 7
Grade 7
(Required - Full Year)
Students will solve real-world and mathematical problems by:
- Understanding and performing calculations with positive and negative rational numbers
- Understanding the concept of proportionality and distinguishing between proportional and other relationships
- Representing proportional relationships with tables, verbal descriptions, symbols and graphs and explaining results in original contexts.
- Applying understanding of the order of operations and algebraic properties to generate equivalent numerical and algebraic expressions and solving equations symbolically, graphically and numerically.
- Using reasoning with proportions and ratios to determine and justify formulas involving circles and related geometric figures
- Analyzing the effect of change of scale, translations, and reflections on the attributes of two-dimensional figures.
- Applying concepts and tools of data to solve problems and make predictions (median, mean and range).

- Displaying and interpreting data in a variety of ways, including circle graphs and histograms.
- Understanding probability calculations using proportions

M074100 Algebra 1
Grade 8
(Required - Full year)

Intermediate Algebra can serve as an alternative to Algebra 1

Students will solve real-world and mathematical problems by:
- Generating equivalent numerical and algebraic expressions and using algebraic properties to evaluate expressions
- Comparing, classifying, and representing real numbers
- Understanding the concept of functions and distinguish between linear and nonlinear functions
- Representing linear functions with tables, verbal descriptions, symbols, and graphs
- Using slope and intercepts of linear equations
- Solving linear equations and inequalities
- Solving systems of linear equations in two variables symbolically, graphically and numerically
- Using the Pythagorean Theorem and its converse
- Applying the properties of positive and negative integer exponents
- Interpreting data and drawing conclusions using scatterplots and approximate lines of best fit

M181001 and M181002 Intermediate Algebra
Grade 8
(Counts toward high school math credit.)
Intermediate Algebra can serve as an alternative to Algebra 1

Students will solve real-world and mathematical problems by:
- Comparing, classifying, and representing real numbers
- Understanding the concept of functions, and identifying important features of functions
- Recognizing common functions in real-world and mathematical situations (linear, quadratic, absolute value, exponential, radical, and rational functions)
- Representing common functions with tables, verbal descriptions, symbols, and graphs
- Using slope and intercepts of linear equations
- Understanding, interpreting and using equations and inequalities involving common functions
- Solving linear equations and inequalities
- Solving quadratic, absolute value, radical, and rational functions
- Representing mathematical situations using equations and inequalities involving common functions
- Solving systems of linear equations in two variables symbolically, graphically and numerically
  using the Pythagorean Theorem and its converse Interpreting data and drawing conclusions using scatterplots and approximate lines of best fit
- Generating equivalent algebraic expressions involving polynomials and radicals; using algebraic properties to evaluate expressions
- High school math credit will be given upon successful course completion

Note: Intermediate Algebra is a high school level course, taught at a faster pace than Algebra 1. The content includes 8th grade MN Math Standards and high school algebra standards, such as linear algebra and quadratics. Successful completion of Intermediate Algebra places a student on the path to take Calculus as a senior.