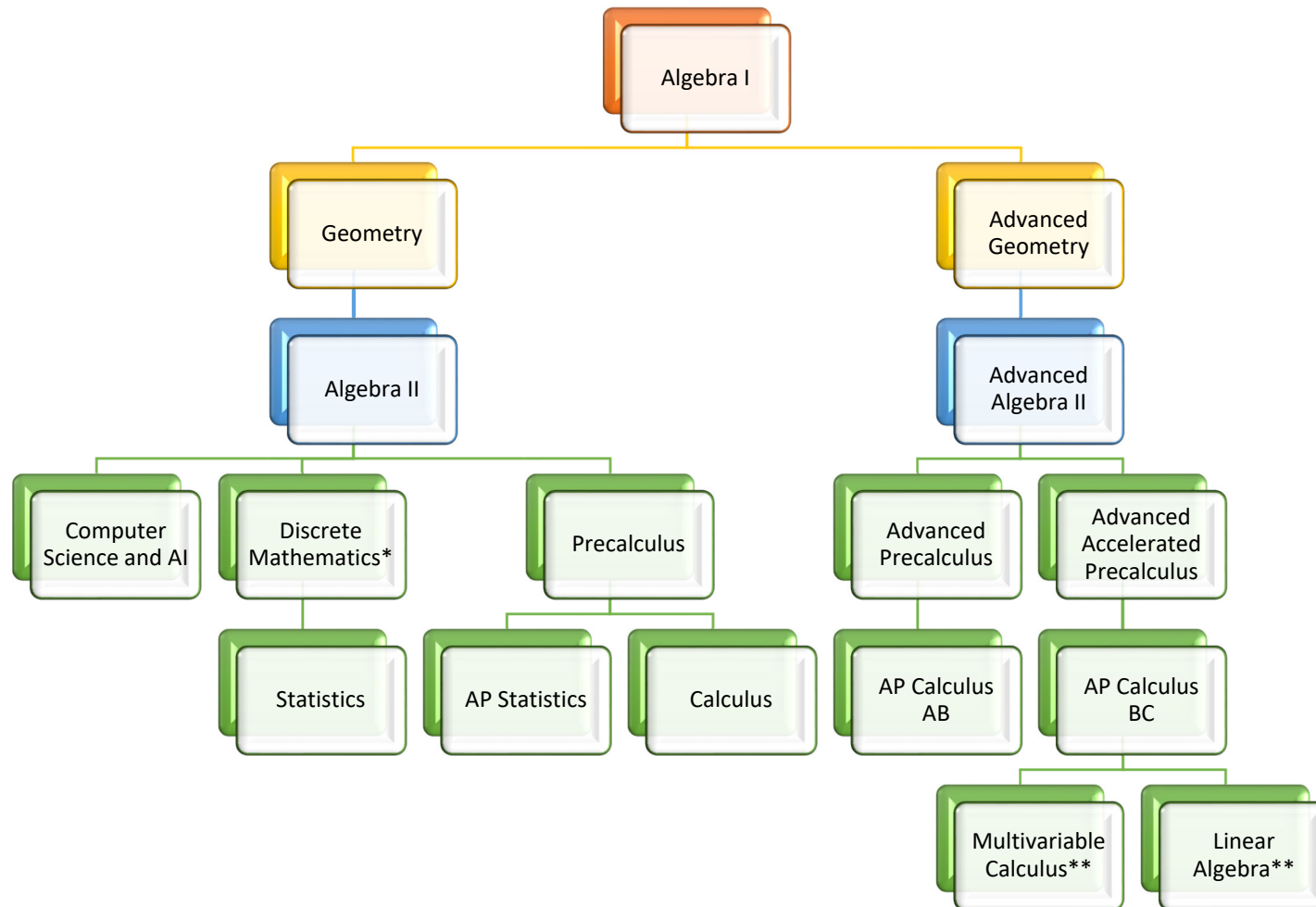


Berkshire School: Mathematics Courses



The chart above is used as a reference and general guide to Berkshire School mathematics courses offered and to their typical sequence. There are many classes available to Berkshire School students to help them discover and foster their interests in mathematics. And if a student is prepared to enter a mathematics class, Berkshire School will support that desire as deemed appropriate.

As a student progresses through the Berkshire School mathematics curriculum, that student may change sequences or move up or down a level depending on their academic performance in a mathematics class. If a student achieves a high, yearlong letter-grade in the sequence track, that student can move into an advanced sequence. If a student is struggling in a course, that student can move down to the appropriate course.

Berkshire School students may also take two mathematics classes concurrently, with departmental permission.

*Discrete Math offering is subject to availability. ** Multivariable Calculus and Linear Algebra offered in alternating years.

BERKSHIRE SCHOOL: Mathematics Skills and Techniques Needed for Each Course

Please locate the course you will be taking at Berkshire for the list of skills/concepts that should be reviewed prior to the start of school.

Course	Skills and Techniques
Algebra I	Operations with integers and fractions Combining like terms, numerical and variable Operational Order Exponents Multi-step equations (variables on both sides)
Geometry	Solving simple and complex equations Combining like terms Exponent Rules Solving basic linear and quadratic equations Operations and rules for fractions and rational expressions
Adv. Geometry	Same as Geometry, plus: Factoring and multiplying polynomials Index Laws Simplifying and operations with rational expressions Simultaneous equations
Algebra II	Complex operational order Multi-step equations and word problems Linear functions-graphing and writing equations General knowledge to quadratics Coordinate graphing-domain and range Exponent properties and combining like terms
Adv. Algebra II/Trig.	Operations with fractions and rational expressions Solving and graphing linear and quadratic functions Factoring polynomials and quadratic formula Writing equations of a line Solving two variable systems (basic) Exponent properties and combining like terms Right triangle trig (basic)

Course	Skills and Techniques
Precalculus	Factoring all levels of polynomials Linear graphing/Forms of linear equations Simultaneous linear equations Exponent properties Log properties Right Triangle Trig/Law of Sines/Cosines
Adv. Precalculus	Same as Precalculus, plus: Understanding basic exponential functions Understanding inverse relations between functions Graphing and solving rational functions Graphing sine, cosine and tangent
Calculus	Factoring quadratics Understanding basic logs and facility with log rules Reducing and manipulating fractions/basic rational expressions Functions-operations, recognition, composition Finding special right triangles (without the unit circle) Basic trig relationships/identities Recognizing parent functions Exponent properties (fractional and negative) Graphic understanding-intercepts, zeros, end behavior, asymptotes, holes, increasing, decreasing, constant Calculator facility with graphing
Statistics	Complex operational order Multi-step equations and word problems Linear functions-graphing and writing equations General knowledge to quadratics Coordinate graphing-domain and range Exponent properties and combining like terms Mean, median and mode