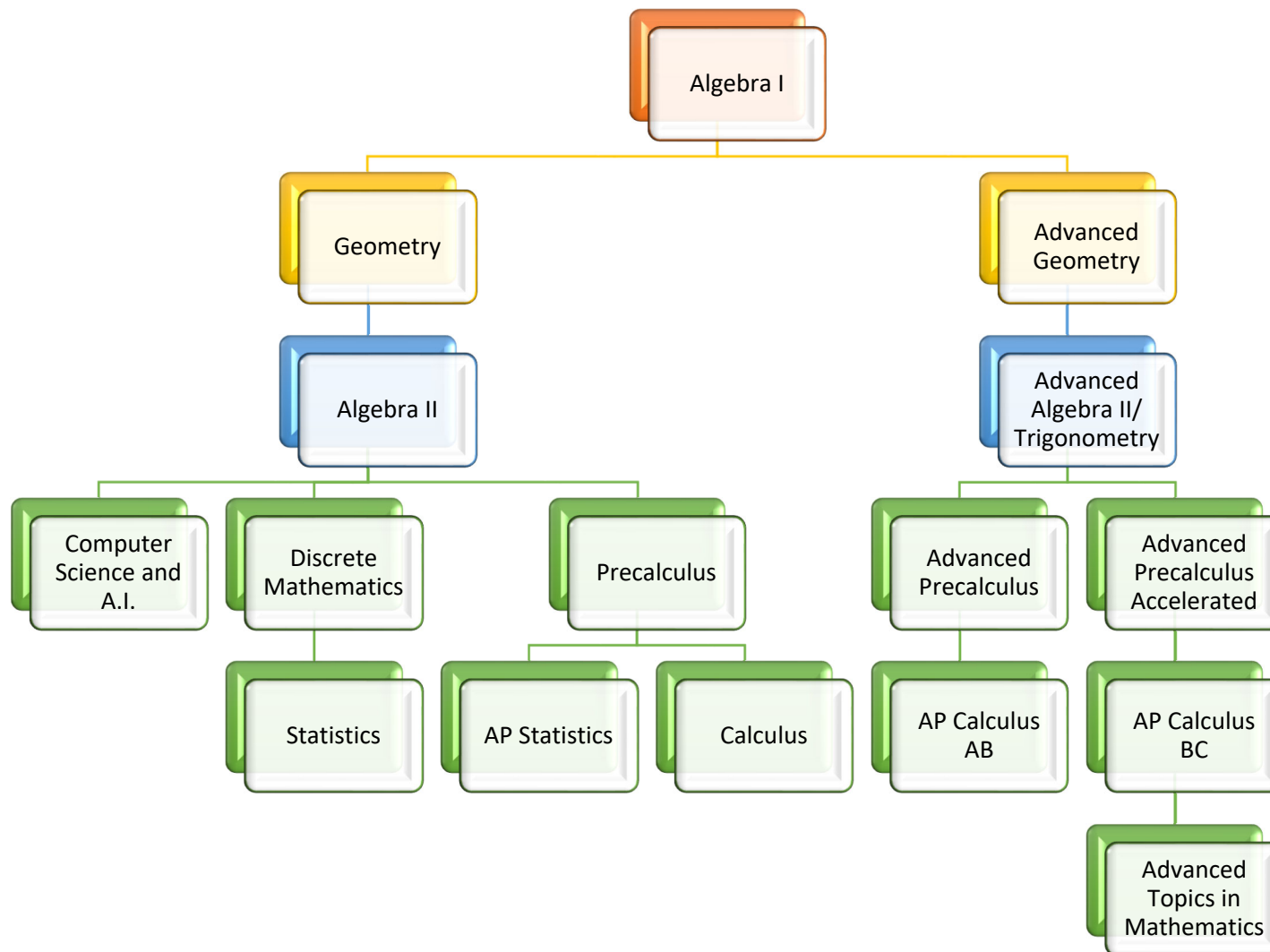


Berkshire School: Mathematics Courses



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.

BERKSHIRE SCHOOL: Mathematics Skills and Techniques

| 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 Log properties Right Triangle Trig/Law of Sines/Cosines |
| 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, 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 |
| Discrete Math | Basic understanding of mean, median and mode Enter, manipulate and solve matrices (TI-nspire) Radical and exponent applications Enter and manipulate combinations and permutations (TI-nspire) Prepared to use video recording device of choice |