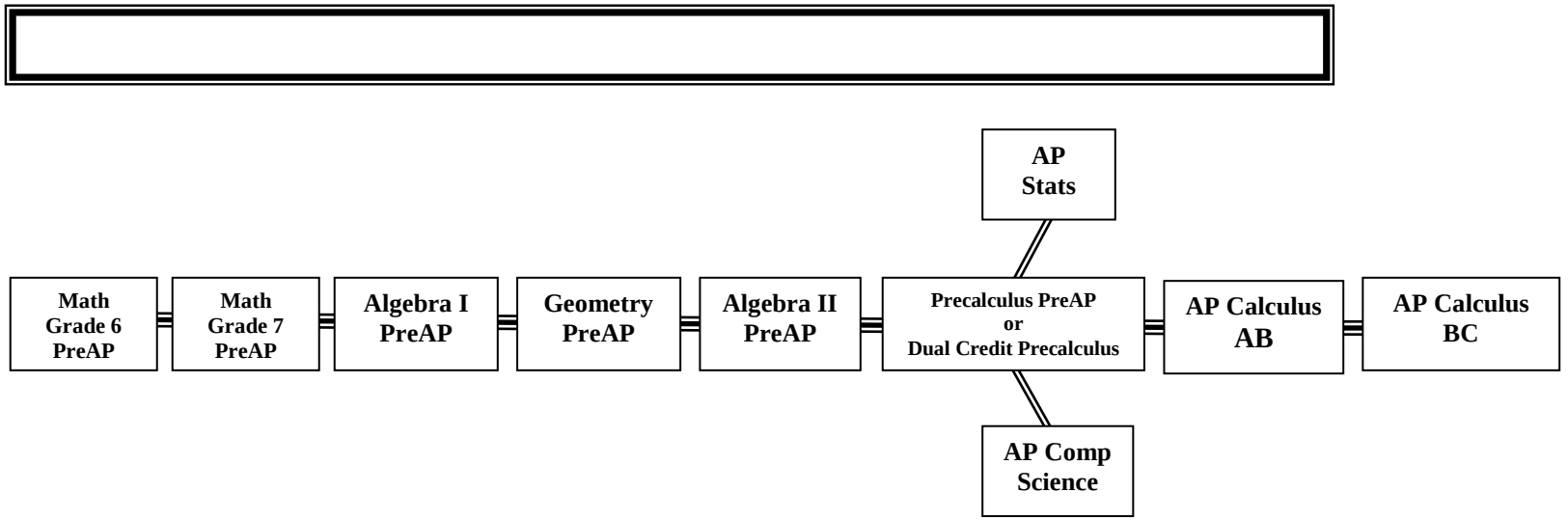
Clear Creek ISD Mathematics Course Recommendation Chart (for students graduating under the MHSP, RHSP, DAP)

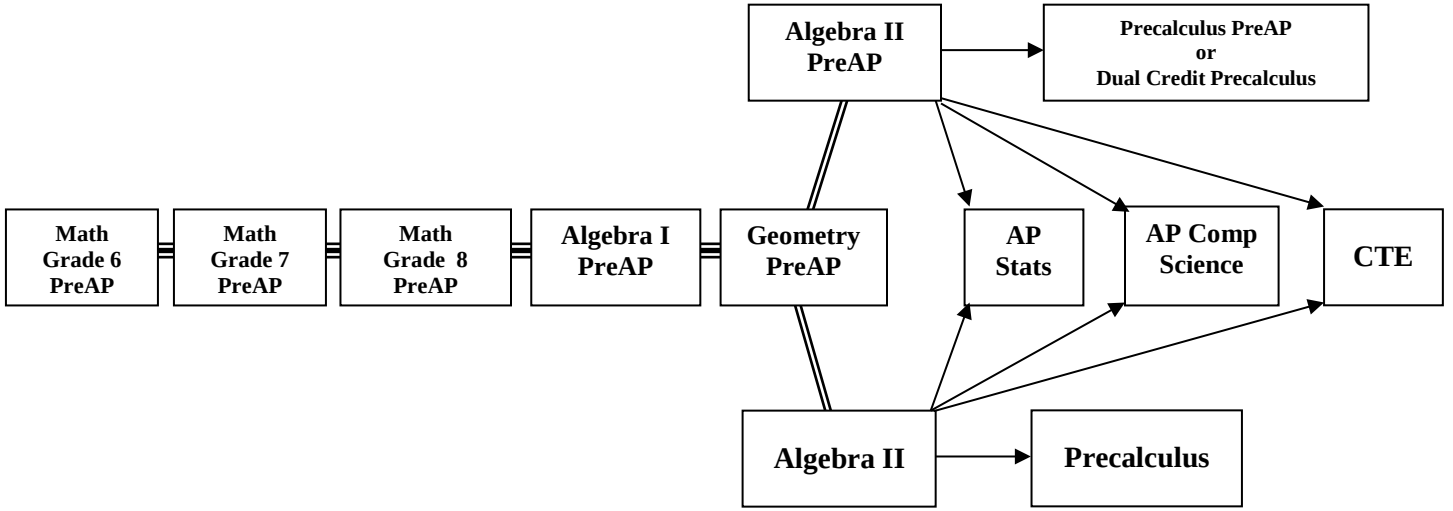
This chart indicates recommended course sequences for grades 9 through 12.
(Bold type indicates preferred course.)
It is strongly suggested that student and parent(s) consult with student's counselor and mathematics teacher in order to determine the most appropriate course choice and sequence.

This Year's Math Course	Next Year's Course
8th Grade Math	**Algebra I**
8th Grade Math (PreAP/GT)	**Algebra I (PreAP/GT)**
Algebra I	**Geometry**
Algebra I (PreAP/GT)	**Geometry (PreAP/GT)**
Geometry	Math Models with Applications **Algebra II**
Geometry (PreAP/GT)	**Algebra II (PreAP/GT)**
Math Models (Must be taken before Algebra II if counted as one of the four Math credits for graduation)	**Algebra II**
Algebra II	**Precalculus** **AP Statistics (AP/GT)** **Advanced Quantitative Reasoning** Computer Science A (AP/GT)
Algebra II (PreAP/GT)	**Precalculus (PreAP/GT)** AP Statistics (AP/GT) Computer Science A (AP/GT)
Precalculus	**AP Statistics (AP/GT)** Computer Science A (AP/GT)
Precalculus (PreAP/GT)	**AP Calculus AB (AP/GT)**
AP Calculus AB (AP/GT)	**AP Calculus BC (AP/GT)**

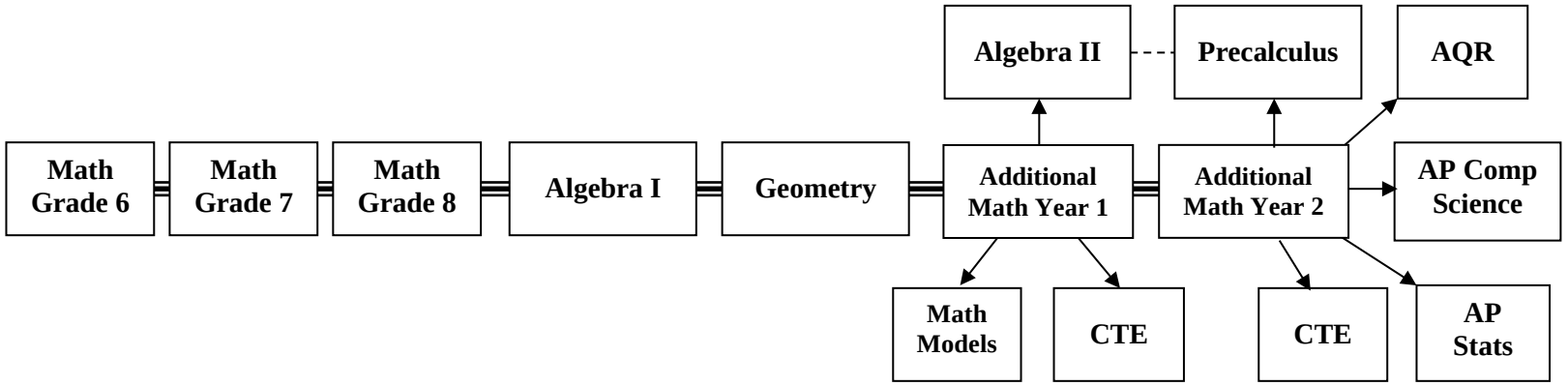
Sample High School Mathematics Course Sequences



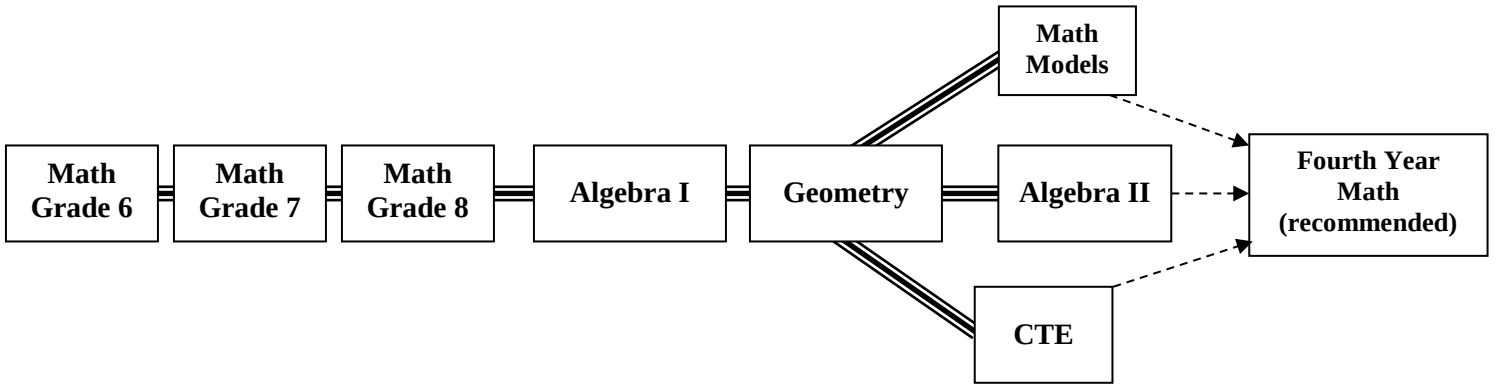
Course Sequence –Foundation HSP with Endorsement Distinguished



Course Sequence – Foundation HSP with Endorsement (Algebra II is required for STEM)



Course Sequence – Foundation HSP



The course sequences shown are examples of course options that students may choose in order to fulfill the requirement for four years of high school mathematics. Most four-year colleges and universities require at least one mathematics course above the Algebra II level. Please consult with your counselor as you develop your high school graduation plan.

2006 Target STAAR – Mathematics, 0.5 credit (local) **GPA Level 2**
Grade Level(s): 9 – 12 **Service ID:** 84100200
Prerequisite(s): Counselor approval.
Notes: Recommended for students who scored below Satisfactory Standard on the Algebra I STAAR EOC exam.

Target STAAR is a semester-long course recommended for all students who failed the mathematics portion of the STAAR test at their previous grade level. This course will provide remediation within the school day for students who have failed, or are in danger of failing, the mathematics portion of the state assessment. Target STAAR will be taken concurrently with a student's mathematics course.

Objectives for each content area and grade level course will be the STAAR objectives for the tests which students require remediation. Strategies will be course-specific and will include such elements as test-taking strategies, problem solving in math and science, reading for meaning, and other content-specific strategies.

2011 Algebra I, 1 credit (state) **GPA Level 2**
Grade Level(s): 9 **Service ID:** 03100500
Prerequisite(s): Mathematics Grade 8
Notes: 2014 Algebra I: Sheltered (For English Language Learners); LPAC approval required; see page 178; students will be required to take the Algebra I STAAR EOC exam.

This course, required for high school graduation, addresses foundation concepts for high school mathematics including algebraic thinking and symbolic reasoning, function concepts, and relationships between equations and functions. It also incorporates underlying mathematical processes including computation and problem-solving, communication and representation of mathematical concepts, and applications and connections to other disciplines. This course will address a variety of algebraic concepts through the use of manipulatives and technology, such as computers and graphing calculators, in order to help students gain a more meaningful understanding of these concepts.

2021 Algebra I (PreAP/GT), 1 credit (state) **GPA Level 1**
Grade Level(s): 9 **Service ID:** 03100500
Prerequisite(s): Mathematics: Grade 8 or Mathematics: Grade 8 (PreAP).
Notes: 2024 Algebra I (PreAP): Sheltered (For English Language Learners); LPAC approval required; see page 178; students will be required to take the Algebra I STAAR EOC exam.

This course encompasses and extends upon all of the concepts and skills included in Algebra I, while providing for development of higher level and critical thinking through derivation of formulas, algebraic proofs, and development and implementation of a problem-solving plan. The mastery of algebraic concepts is enhanced through the use of technology such as graphing calculators and computers, and through applications and connections to other disciplines, both inside and outside of mathematics.

2111 Geometry, 1 credit (state) **GPA Level 2**
Grade Level(s): 10 **Service ID:** 03100700
Prerequisite(s): Algebra I
Notes: 2114 Geometry: Sheltered (For English Language Learners); LPAC approval required; see page 178.

This course, required for high school graduation, addresses foundation concepts for high school mathematics including geometric thinking and spatial reasoning, geometric figures and their properties, and the relationship between geometry and other mathematics, and other disciplines. Hands-on activities, computers, and graphing calculators are utilized to illustrate and reinforce geometry concepts.

2121 Geometry (PreAP/GT), 1 credit (state) **GPA Level 1**
Grade Level(s): 9-10 **Service ID:** 03100700
Prerequisite(s): Algebra I or Algebra I (PreAP/GT).
Notes: 2122 Geometry PreAP: Sheltered (For English Language Learners); LPAC approval required; see page 178.

This course encompasses and extends upon all of the concepts, skills, and technology applications included in geometry, as well as providing students with the opportunity to do research on the history and development of geometry. This course also includes units in trigonometry and coordinate geometry, symbolic logic, and tessellations. Special projects related to geometry are required throughout the year.

2711 Mathematical Models with Applications, 1 credit (state) **GPA Level 2**

Grade Level(s): 10-12 **Service ID:** 03102400

Prerequisite(s): Algebra I; may be taken concurrently with Geometry.

Notes: 2714 Mathematical Models with Applications: Sheltered (For English Language Learners); LPAC approval required; see page 178; this course must be taken PRIOR to Algebra II if it is to be counted as one of a student's four required State math credits on the Recommended Graduation Plan; Math Models with Applications will not be counted as one of the four required State math credits on the Distinguished Achievement Plan.

This course is designed as a transitional course between Geometry and Algebra II and is only for students who need to strengthen their math skills prior to enrollment in Algebra II. This course is not required prior to taking Algebra II.

This course includes the use of algebraic, graphical, and geometric reasoning to demonstrate patterns and structures, to model information, and to solve problems from various disciplines. Students will use mathematical methods to model and solve real-life applied problems involving personal finance, probability and statistics, science, and fine arts. This is an activity-based course involving data gathering and group projects, and will include extensive use of technology including computer software and graphing calculators.

2211 Algebra II, 1 credit (state) **GPA Level 2**

Grade Level(s): 11 **Service ID:** 03100600

Prerequisite(s): Geometry or Geometry (PreAP/GT).

Notes: 2214 Algebra II: Sheltered (For English Language Learners); LPAC approval required; see page 178**.**

This second-year algebra course includes concepts and skills necessary for higher-level high school mathematics study. Concepts and skills incorporate and extend beyond the Texas Essential Knowledge and Skills, and are addressed with depth and complexity. Topics include, but are not limited to, algebraic thinking and symbolic reasoning; functions, equations and their relationships; and the relationship between algebra and geometry. The use of manipulatives, models, computers, and graphing calculators is incorporated throughout the course, in order to enhance and reinforce mastery of algebraic concepts.

2221 Algebra II (PreAP/GT), 1 credit (state) **GPA Level 1**

Grade Level(s): 10-11 **Service ID:** 03100600

Prerequisite(s): Geometry or Geometry (PreAP/GT).

Notes: 2222 Algebra II PreAP: Sheltered (For English Language Learners); LPAC approval required; see page 178.

This course encompasses and extends upon all of the concepts, skills, and technology applications included in Algebra II (Enriched), as well as offers opportunities to abstract generalizations from complex situations and to transfer and apply knowledge to new situations. Students will use higher level thinking skills in algebraic proofs and derivation of certain equations, and will be challenged through complex and in-depth problems associated with a variety of supplemental topics. The use of manipulatives, models, computers, and graphing calculators is incorporated throughout the course, in order to enhance mastery of algebraic concepts.

2731 Advanced Quantitative Reasoning, 1 credit (state) **GPA Level 2**

Grade Level(s): 12 **Service ID:** 03102510

Prerequisite(s): Geometry and Algebra II.

Notes: 2734 Advanced Quantitative Reasoning: Sheltered (For English Language Learners); LPAC approval required; see page 178.

This course extends upon concepts and skills from Algebra II and prepares students to pass the Texas Higher Education Assessment (THEA) or other college mathematics placement test.

The primary focal points of Advanced Quantitative Reasoning include the use of statistical methods, analysis of information using data and probability, modeling change and mathematical relationships, mathematical decision making in finance and society, and spatial and geometric modeling for decision making. Students will learn to become critical consumers of the quantitative data that surround them every day, knowledgeable decision makers who use logical reasoning, and mathematical thinkers who can use their quantitative skills to solve problems related to a wide range of situations and mathematical topics not typically covered in high school.

2311 Precalculus, 1 credit (state) **GPA Level 2**
Grade Level(s): 11-12 **Service ID:** 03101100
Prerequisite(s): Algebra II or Algebra II (PreAP/GT).
Notes: 2314 Precalculus: Sheltered (For English Language Learners); LPAC approval required; see page 178.

This course addresses concepts and skills including use of symbolic reasoning and analytical methods for representing mathematical situations, expression of generalizations, and the study of mathematical concepts and the relationships among them. Functions, equations, and limits will be used as tools for making generalizations, and for analyzing and understanding a broad variety of mathematical relationships. Functions, as well as symbolic reasoning, will be used to represent and connect ideas in geometry, probability, statistics, trigonometry and calculus, and to model physical situations. The use of models and technology will be integrated throughout the course.

2321 Precalculus (PreAP/GT), 1 credit (state) **GPA Level 1**
Grade Level(s): 11-12 **Service ID:** 03101100
Prerequisite(s): Algebra II or Algebra II (PreAP/GT).
Notes: 2322 Precalculus PreAP: Sheltered (For English Language Learners); LPAC approval required; see page 178; this course is recommended for students planning to take AP Calculus.

This course encompasses and extends upon all of the concepts, skills, and technology applications included in Precalculus, as well as provides opportunities for higher level thinking and abstraction. Trigonometry and advanced algebraic and geometric concepts will be studied, with emphasis on derivation, proof, real-world application, graphical interpretation, and connection and extension to other topics and disciplines.

2400 Independent Study Mathematics: Calculus, 1 credit (state) **GPA Level 2**
Grade Level(s): 11-12 **Service ID:** 03102500
Prerequisite(s): Precalculus
Notes: This course does not prepare students for the College Board Advanced Placement Calculus AB or BC exams; students may not take this course if they have 3 credits for Independent Study: Mathematics.

This course will develop the students understanding of the concepts of calculus and provide experiences with its methods and applications. The course will emphasize a multi-representational approach to calculus with concepts, results, and problems being expressed graphically, numerically, analytically and verbally. The connections among these representations will be stressed. Technology will be used regularly by students to reinforce the relationships among the multiple representations of function, to confirm written work, to implement experimentation, and to assist in interpreting results. Through the use of the unifying themes of derivatives, integrals, limits, approximation, and applications and modeling, the course will be a cohesive whole rather than a collection of unrelated topics.

2421 Calculus AB (AP/GT), 1 credit (state) **GPA Level 1**
Grade Level(s): 11-12 **Service ID:** A3100101
Prerequisite(s): Precalculus (PreAP/GT preferred).
Notes: This course prepares students for the College Board Advanced Placement Calculus AB exam.

AP Calculus AB is a course designed by the College Board Advanced Placement Program, and taught according to the standards set forth by the College Board. Topics in AP Calculus AB include, but are not limited to, functions, graphs, and limits; derivatives, integrals, and their applications; the Fundamental Theorem of Calculus; anti-differentiation techniques and applications; and numerical approximations to definite integrals. This course incorporates extensive use of technology.

2521 Calculus BC (AP/GT), 1 credit (state) **GPA Level 1**
Grade Level(s): 12 **Service ID:** A3100102
Prerequisite(s): Calculus AB (AP/GT) or counselor approval.
Notes: This course prepares students for the College Board Advanced Placement Calculus BC exam.

AP Calculus BC is a course designed by the College Board Advanced Placement Program, and taught according to the standards set forth by the College Board. AP Calculus BC is an extension of AP Calculus AB, rather than an enhancement; common topics require a similar depth of understanding. In addition to the topics in AP Calculus AB, topics in AP Calculus BC will include, but are not limited to, parametric, polar, and vector functions, their derivatives, integrals, and applications; differential equations; additional antiderivative techniques; improper integrals; and sequences and series, and their approximations. This course incorporates extensive use of technology.

2621 Statistics (AP/GT), 1 credit (state) **GPA Level 1**

Grade Level(s): 11-12 **Service ID:** A3100200

Prerequisite(s): Algebra II or Algebra II (PreAP/GT).

Notes: This course prepares students for the College Board Advanced Placement Statistics exam.

AP Statistics is a course designed by the College Board Advanced Placement Program, and taught according to the standards set forth by the College Board. Topics in AP Statistics are divided into four major themes: exploratory analysis, planning a study, probability, and statistical inference. Exploratory analysis of data makes use of graphical and numerical techniques to study patterns and departures from patterns. Planning a study involves collecting data according to a well-developed plan, in order to obtain valid information on a conjecture. Probability is the tool used for anticipating what the distribution of data should look like under a given model. Statistical inference guides the selection of appropriate models. This course incorporates extensive use of technology.

2821 Computer Science A (AP/GT), 1 credit (state) **GPA Level 1**

Grade Level(s): 10-12 **Service ID:** A3580100

Prerequisite(s): Computer Science/Programming (PreAP/GT preferred).

Notes: $10 class fee.

This course builds on the content taught in Computer Science/Programming. Students will learn advanced object-oriented programming using the Java programming language. The topics include data types, functions, control structures, data structures, and the use of classes and files. Upon completion of this course, students will be prepared to take the College Board Advanced Placement Computer Science A exam.

2999 Independent Study: Mathematics (Adv Acad), 0.5 credit (state) **GPA Level 1**

Grade Level(s): 11-12 **Service ID:** 03102500

Prerequisite(s): Application required; completion of Precalculus.

Notes: A possible Distinguished Achievement Plan Advanced Measure.