Course Name: Precalculus
School Year: 2020 - 2021

Course Purpose and Relevance:

Precalculus is the preparation for calculus. The course approaches topics from a function point of view, where appropriate, and is designed to strengthen and enhance conceptual understanding and mathematical reasoning used when modeling and solving mathematical and real-world problems. Students systematically work with functions and their multiple representations. The study of Precalculus deepens students' mathematical understanding and fluency with algebra and trigonometry and extends their ability to make connections and apply concepts and procedures at higher levels. Students investigate and explore mathematical ideas, develop multiple strategies for analyzing complex situations, and use technology to build understanding, make connections between representations, and provide support in solving problems.

The **process standards** weave the other knowledge and skills together so that students may be successful problem solvers and use mathematics efficiently and effectively in daily life. When possible, students will apply mathematics to problems arising in everyday life, society, and the workplace. Students will use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution. Students will select appropriate tools such as real objects, manipulatives, algorithms, paper and pencil, and technology and techniques such as mental math, estimation, number sense, and generalization and abstraction to solve problems. Students will effectively communicate mathematical ideas, reasoning, and their implications using multiple representations such as symbols, diagrams, graphs, computer programs, and language. Students will use mathematical relationships to generate solutions and make connections and predictions. Students will analyze mathematical relationships to connect and communicate mathematical ideas. Students will display, explain, or justify mathematical ideas and arguments using precise mathematical language in written or oral communication.

Overview of Student Outcomes:

- The student explores, describes, and analyzes the attributes of functions.
- The student makes connections between multiple representations of functions and algebraically constructs new functions.
- The student analyzes and uses functions to model real-world problems.
- The student models and makes connections between algebraic and geometric relations.
- The student applies appropriate techniques, tools, and formulas to calculate measures in mathematical and real-world problems.
- The student evaluates expressions, describes patterns, formulates models, and solves equations and inequalities using properties, procedures, or algorithms

Available Support for Student Learning:

Refer to the teacher's Course Syllabus for resources and course specific opportunities. The adopted textbook for Precalculus is McGraw Hill Texas Precalculus. Student textbook and/or digital version are available through the CCISD Student Portal.

Links to Course TEKS and RESOURCES FOR PARENTS on TEA website:

Texas Knowledge and Skills for Precalculus
Resources for Parents

First Grading Period

Unit 1: Combination of Functions

Unit 2: Power and Polynomial Functions, Equations, and Inequalities

Unit 3: Rational Functions and Inequalities

Second Grading Period

Unit 4: Exponential and Logarithmic Equations and Functions

Unit 5: Trigonometry

Semester Review and Campus Exam

Third Grading Period

Unit 6: Trigonometric Functions

Unit 7: Trigonometric Identities

Unit 8: Conics

Fourth Grading Period

Unit 9: Parametric Equations

Unit 10: Vectors

Unit 11: Polar Coordinate System

Unit 12: Sequences and Series