

MATHEMATICAL CONTENT

Number Sense and Operations

- Properties of numbers and number systems
- Vectors and matrices
- Number theory arguments
- Meanings of operations and how they relate to one another
- Computation and estimation (algorithms and problem solving)

Algebra

- Multiple representations (graphs, charts, words)
- Proportional reasoning (numerical relationships)
- Patterns, relations, and functions (if, then)
- Algebraic symbols (variables, algorithms)
- Balance (equivalence)
- Discrete mathematics

Geometry and Measurement

- Properties, area, volume, and perimeter of two- and three-dimensional geometric shapes
- Coordinate geometry
- Transformations and symmetry
- Visualization, spatial reasoning, and geometric modeling
- Measurable attributes of objects and the units, systems, and processes of measurement
- Proofs (inductive and deductive reasoning)

Data Analysis, Probability, and Statistics

- Collection, organization, and display of data to answer research questions
- Statistical methods
- Inferences and predictions
- Calculating probability

Calculus

- Derivatives/antiderivatives
- Limits
- Functions
- Correlation/deviation/variance
- Definite integral
- Integration
- Differential equations
- Inverses

MATHEMATICAL GOAL

College Readiness

Students should experience the interplay of number sense; algebra; geometry and measurement; data analysis, probability, and statistics; and calculus, and should be able to successfully apply their understanding of high school mathematics to college math courses in order to be guaranteed access to a broad spectrum of education and career options.

MATHEMATICAL PROCESS

Mathematical Reasoning and Application (taught and practiced across all strands)

Students make and investigate mathematical conjectures; solve problems that arise in mathematics and in other contexts; and communicate their mathematical thinking coherently and clearly to peers, teachers, and others.