A Guide to the Colorado Academic Standards

Working Together

To support families and teachers in realizing the goals of the Colorado Academic Standards, this guide provides an overview of the learning expectations for high school mathematics and offers some possible learning experiences students may engage in during this time.

Why Standards?

Created by Coloradans for Colorado students, the Colorado Academic Standards provide a grade-by-grade road map to help ensure students are ultimately successful in college, careers, and life. The standards aim to improve what students learn and how they learn in ten content areas, emphasizing critical-thinking, creativity, problem solving, collaboration, and communication as important life skills in the 21st century.

Mathematics Education for High Schools (9-12)

The mathematics standards throughout middle and high school build on the strong foundation of number developed during elementary school. Students begin to branch into other areas of mathematics such as probability, statistics and algebra. The study of geometry and geometric proof is also formalized during these years. The work of geometric proof is also extended to all parts of mathematics as students construct viable arguments and critique the reasoning of others. In each grade students investigate the world around them through mathematics. They confront problems and persevere in solving them as they strategically apply mathematical tools and techniques.

Where can I learn more?

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Mathematics Learning Expectations for Integrated I

Number Sense, Properties, and Operations
Choose the correct units for a problem such as feet versus miles and consider these units when solving problems.

Patterns, Functions, and Algebraic Structures
Fluently write equations for lines; solve systems of linear equations and inequalities; represent the relationship between two quantities using linear and exponential functions; rearrange exponential equations by using properties of exponents.

Data Analysis, Statistics, and Probability
Estimate the mean and standard deviation of a population from sample data; describe if two variables are strongly or weakly correlated; explain the difference between correlation and causation.

Shape, Dimension, and Geometric Relationships
Fluently use rotations, reflections and translations to show relationships between shapes; prove theorems about lines, angles, triangles and parallelograms.

Throughout Integrated I, you may find students…

- Explaining why a scientist needs to know if the distance to a nearby asteroid was calculated using miles or kilometers.

- Using graphs, tables, and equations to describe the spread of a virus over time.

- Determining the monthly interest rate for a savings account with an annual interest of 4.5%.

- Distinguishing whether the growth of a population of prairie dogs is linear or exponential.

- Writing geometric proofs to prove ideas about angles, lines, and figures.

- Examining the relationship between a person's income and their parents' income and making an argument about the relationship between the incomes.

- Using spreadsheets and other technologies to create and represent profit and/or losses of a business.

- Determining the amount of water wasted by a dripping faucet over the course of one year.