

Algebra 1 with Computing and Robotics

The course guides students through topics in Algebra 1 in Common Core State Standards for Mathematics while simultaneously teaching students programming and computational thinking. Students use programming in C/C++ interpreter Ch to reinforce and extend their knowledge of mathematical concepts by analyzing real life situations, identifying given information, formulating steps that a computer program could calculate to find a solution, analyzing the results for accuracy, and revising/modifying the programming solutions as necessary. Topics covered include solving one-variable equations with multiple steps, solving and plotting absolute value equations and inequalities, linear equations, systems of linear equations and inequalities, polynomial functions, exponential functions, and step and piecewise functions, evaluating, multiplying, and factoring polynomial functions, solving quadratic equations with applications, probability, statistical data analysis and visualization, and arithmetic and geometric sequences. Robotics activities allow students to reenact physically derived mathematical problems through robotics technologies to visualize situations, associate linear and quadratic graphs with physical phenomenon, predict and identify key features of the graphs with robotic systems, and solve robotics problems through mathematical modeling and programming.

* **Approved with C math credit.** *Teaching resources contain robotics activities.*

[A-G approved course outline](#)