Numerical skill and quantitative reasoning remain crucial even as students move forward with algebra. Algebra, functions, and geometry are important not only as mathematical subjects in themselves but also because they are the language of technical subjects and the sciences. And in a data-rich world, statistics and probability offer powerful ways of drawing conclusions from data and dealing with uncertainty. The high school standards also emphasize using mathematics creatively to analyze real-world situations — an activity sometimes called “mathematical modeling.”

The high school standards are organized into six major content areas: Number and Quantity; Algebra; Functions; Modeling; Geometry; and Statistics and Probability.

**An Overview of the Work Your Child Will Be Doing in High School to Become Ready for College and Career**

**Number and Quantity**
- Working with rational and irrational numbers, including working with rational exponents (e.g., rewriting \((5^3)^{1/2}\) as \(5\sqrt{5}\))
- Solving problems with a wide range of units and solving problems by thinking about units (e.g., “The Trans Alaska Pipeline System is 800 miles long and cost $8 billion to build. Divide one of these numbers by the other. What is the meaning of the answer?”; “Greenland has a population of 56,700 and a land area of 2,175,600 square kilometers. By what factor is the population density of the United States, 80 persons per square mile, larger than the population density of Greenland?”)

**Algebra**
- Solving real-world and mathematical problems by writing and solving nonlinear equations, such as quadratic equations \((ax^2 + bx + c = 0)\)
- Interpreting algebraic expressions and transforming them purposefully to solve problems (e.g., in solving a problem about a loan with interest rate \(r\) and principal \(P\), seeing the expression \(P(1+r)^n\) as a product of \(P\) with a factor not depending on \(P\)
Parent Tips: Planning for College and Career

At the beginning of high school, sit down with your child’s teachers, counselor or other advisor to discuss what it will take for your child to graduate, your child’s goals, and his/her plans after high school. Create a plan together to help your child reach these goals. This plan should include:

- An appropriate course sequence to meet your child’s goals.
- The most appropriate extracurricular activities for your child.
- Your plan to help your child prepare for college or career. For example, if your child is interested in a particular field, look to see if internships exist to build his/her work experience in that subject area.

For more information, the full standards are available at www.corestandards.org.