

## Parent Involvement and Awareness:

# Information All Parents Should Know About High School Mathematics Courses

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## High School Mathematics Has Changed

If your high school days are in the distant past, you may be surprised at the dramatic changes that have taken place in mathematics education at the high school level. New state laws have led to a reorganization of high school mathematics courses and have resulted in new requirements for high school graduation and/or receiving a diploma. Today's high school mathematics classes provide more rigor and opportunities for students to be better prepared for college and careers. High school graduation requirements require students to learn more mathematics than ever before! The days of sliding by with "easy" math courses are long gone. One way you can help your children succeed in high school mathematics is by understanding the new requirements and supporting your student in meeting the challenge of high school mathematics courses necessary for graduation and preparation for college.

## California's High School Mathematics Curriculum Course Standards

All high school students now experience mathematics classes that are based on state curriculum standards. The high school standards are focused on specific courses rather than on the five broad topics, or strands, that frame mathematics learning in grades K-7. There is a detailed and individual set of standards for Algebra I, Geometry, Algebra II, Trigonometry, Mathematical Analysis, Linear Algebra, Probability & Statistics, and Calculus. These standards are contained in the California Department of Education publication, *Mathematics Framework for California Public Schools*. You should be able to find a copy of this state document at your school or at any public library. This state guide includes complete and detailed lists of the standards for each high school mathematics course. Courses that incorporate the California Standards are more rigorous and demanding

of students since they are designed to prepare students for the challenges they will face in college and careers, all of which routinely require knowledge of higher-level mathematics.

## Two Years of High School Mathematics Is Now Required for ALL Students

The California Education Code now requires all high school students to complete a minimum of two years of standards-based mathematics courses for graduation; many school districts now have their own requirement of three full years of mathematics. For admission to either of the California State University systems, students must complete three standards-based math courses, and four is preferable. Today, the traditional sequence of high school math courses is Algebra I, Geometry, Algebra II, Precalculus, and Calculus, however many high schools also offer Trigonometry, Mathematical Analysis, Linear Algebra, and Probability & Statistics. Students who successfully complete Algebra in eighth grade often take Geometry as their first high school mathematics course, and many that plan to attend a four-year college take Calculus as their fourth high school mathematics course. "General Math," or "business Math" courses, which many parents will remember from their high school years, are no longer offered at most high schools in order to encourage ALL students to prepare for college by taking college-prep mathematics courses.

Since all students must take at least two (and often three) years of mathematics from the courses listed above to meet this requirement, it is critical that students build a firm mathematics foundation in their elementary and middle school years.

## Algebra Is Required for Graduation

The topic of algebra is considered the

foundation for all higher-level mathematics, so students must master it for advancement to other classes, as well as for graduation from high school. State law now requires satisfactory completion of an algebra course for graduation from high school. This algebra course must address all of the California Mathematics Curriculum Standards for Algebra I. To ensure that students are successful in high school algebra, there is increasing emphasis on teaching the beginning concepts of algebra throughout the elementary and middle school years.

### **California High School Exit Examination (CHSEE) Is Now Required for a Diploma**

For the first time in California's history, all students must take and pass the California High School Exit Exam (CAHSEE) in order to earn a high school diploma. Students may graduate from high school without passing the test, but without a diploma. Your child will be required to take the CHSEE test for the first time in tenth grade. Students who don't pass the test the first time will have many opportunities to take it again in both the eleventh and twelfth grades. The High School Exit Exam is a rigorous three-hour test covering the number sense, geometry, statistics, probability, and algebra concepts that are contained in the California Mathematics Curriculum Standards.

### **Advanced Placement (AP) Courses Offer New Challenges and College Credit**

Students who work hard and are successful in mathematics may have the opportunity to take Advanced Placement (AP) mathematics courses in high school. These courses offer students the highest level of mathematics study available in high school and can be counted as college credits. By design, each AP course covers the exact course work of the college course with the same name. To successfully complete an AP mathematics course, students must not only earn a passing grade in the course, they must also take an AP test for that mathematics topic to measure their understanding of the concepts covered. Taking AP mathematics courses in high school provides a distinct advantage to college-bound students, often helping them get into the college of their choice since colleges and

universities give special consideration to applicants who have successfully completed AP mathematics courses.

### **Parents and Guardians Play an Important Role in Student Success in High School**

First and foremost, be sure your children know you have confidence in their ability to succeed in high school mathematics classes. To help you understand the requirements and challenges of these courses, learn more about the mathematics requirements. You do not need to know a lot of mathematics personally to counsel your children in their high school mathematics courses. No matter what your own background and experiences have been in mathematics, encourage them to take MORE mathematics and to work hard in their courses. Mathematics is hard for many, but it is a myth that only a few are "good" at mathematics. With effort and support all students can study and learn mathematics. 📦

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