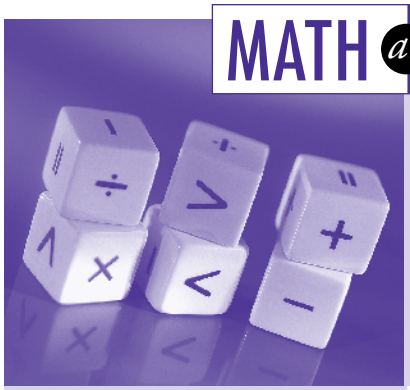


MATH *at* HOME

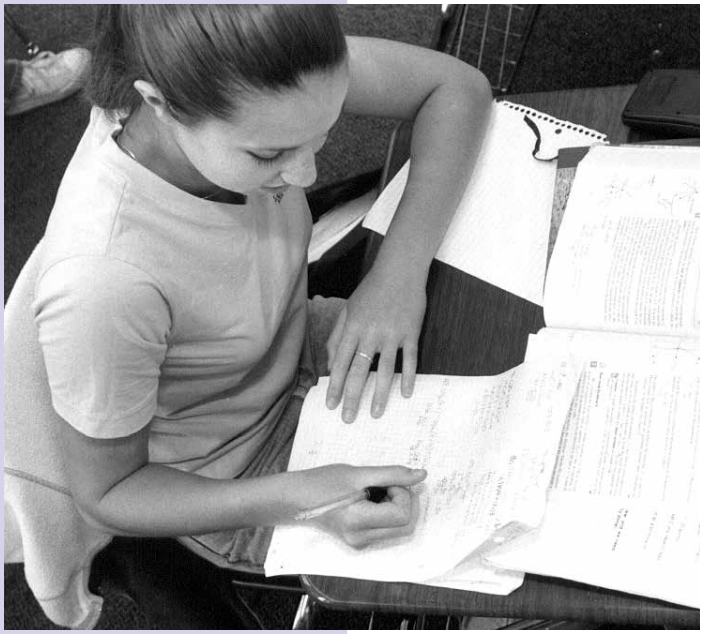
HELPING YOUR CHILDREN LEARN AND ENJOY MATHEMATICS

TAKING A LOOK AT HIGH SCHOOL MATH

Mathematics concepts increase in difficulty and complexity when students enter high school. All students should expect to encounter material that is more challenging than what they studied in elementary and middle school. Success in high school math courses is the result of hard work and perseverance.

You can help your high school students be successful in mathematics by understanding what they are required to learn, encouraging them to keep up with homework, and suggesting they ask questions in class. Tell your children you have confidence in their ability to succeed and actively support their learning at home and in school. Always speak positively about mathematics and remind your children how important math is for getting into collage.

To help you understand the requirements and challenges of high school mathematics, here is some key information.



THERE ARE STANDARDS FOR HIGH SCHOOL MATH

The high school mathematics curriculum is based on the Common Core Standards. These standards cover the body of conceptual understanding, skills, and applicatons that all students should learn to be "college and career ready." Courses that incorporate the Common Core Standards are more rigorous and demanding than mathematics classes offered in the past. They are designed to prepare students for the challenges they will face, no matter what they study in college or which career they choose.

THREE YEARS OF HIGH SCHOOL MATH IS THE GOAL

To graduate, California requires all high school students to successfully complete at least two years of mathematics including Algebra I or a combination of courses that meet the content standards for algebra. However, most colleges and universities now require three full years of high school mathematics for admission and many, including the University of California, now recommend that students who wish to major in science, technology, engineering, or math

take four years of high school mathematics, including calculus or statistics.

There are two high school mathematics course sequences

All college-prep high school mathematics courses now align with the Common Core Standards and offer students two course-of-study "pathways." Though the content has changed, schools may offer the traditional sequence of courses—Algebra I, Geometry, Algebra II—or they may offer classes that integrate these subjects each year in a Mathematics I, II, and III course sequence. Both sequences include the same mathematics concepts, but organize them differently.

Math learning is tested prior to graduation

Beginning in 2014-15, every eleventh-grade student in California must take the Smarter Balanced Assessment for high school mathematics, a rigorous test aligned to the Common Core Standards. This assessment includes open-response items that assess students' reasoning and problem solving, along with multiple-choice items that address basic procedural knowledge and understanding.

During the transition to the Common Core Standards, students will still be required to take and pass the California High School Exit Exam (CAHSEE), which is not directly aligned to the Common Core Standards. However, all of the mathematics on the Exit Exam is addressed in the Common Core Standards. Students who have mastered the standards will be prepared to do well on the High School Exit Exam.

AP courses provide additional challenges

If your child is successful in mathematics and enjoys academic challenges, he or she may have the opportunity to take Advanced Placement (AP) mathematics courses. These courses offer the highest level of mathematics study available in high school and are meant to count for college credit. Taking AP math courses can provide an advantage to college-bound students because colleges and universities often give special consideration to applicants who have completed these courses.

If your child is having difficulty in a high school math course, talk to the teacher, school counselor, or principal. They can recommend additional learning strategies and may provide extra resources, such as after-school tutoring or summer school, that can make a difference in your child's success.

EXERCISES, PROBLEMS, AND INVESTIGATIONS

Students don't study math exclusively by completing worksheets filled with numbers anymore. Although great emphasis is placed on learning mathematical facts and procedures, schools are also teaching students to think and communicate mathematically.

Math exercises, problems, and investigations are examples of the kinds of work students are doing in school to foster mathematics learning. The samples below illustrate how each approach leads to a different type of learning.

- **A Math Exercise:** Find the area and perimeter of a rectangle with a length of 7.5 inches and a width of 4.75 inches.

- **A Math Problem:** The perimeter of a rectangle is 36 inches. What are all the possible whole number dimensions of this rectangle?

- **A Math Investigation:** What is the relationship between the area of a rectangle and its perimeter? For a rectangle with an area of 48 square feet, what are its possible dimensions—that is, what lengths, widths, and perimeters are possible? Do all rectangles with the same perimeter have the same area? Prepare a report describing your work and your findings. Provide any charts, tables, or graphs that help explain your thinking.