

# MATH *at* HOME



HELPING  
YOUR CHILDREN  
LEARN AND ENJOY  
MATHEMATICS

## UNDER- STANDING THE MATH STANDARDS

The California mathematics standards specify the math concepts your child is expected to learn in each grade. As your child progresses through school, you'll probably find it helpful to know a bit about the standards—or, if you're interested, to explore the standards in greater depth.

All public schools are required to “teach to the standards” so that students receive a firm foundation in mathematics. School textbooks, state tests, and high school graduation requirements are now determined by the standards. They are *that* important.

Because of the state standards, the study of mathematics is now more uniform from school to school. Students at the same grade level are learning similar math skills no matter what public school they are attending. For parents, the standards provide an opportunity to know exactly what your child should be studying each year and what's required for advancement from one grade to the next.

The California mathematics standards are readily available to parents. You'll find copies of the standards in schools, at your county office of education, or on the Internet ([www.cde.ca.gov/board](http://www.cde.ca.gov/board)).

Grade-level standards with examples of math problems related to the standards are included in the *Mathematics Framework for California Public Schools*. This document is available from the California Department of Education or online at [www.cde.ca.gov/cfir/](http://www.cde.ca.gov/cfir/).

While the standards are much too long to include in this

booklet—there are hundreds of standards, grouped by grade level—knowing a little about them will help you understand their importance to your child's education. The standards are based on the belief that every student should:

1. Develop fluency in basic computational skills;
2. Develop understanding of mathematical concepts and ideas;



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3. Become a mathematical problem-solver;
4. Learn to communicate using mathematical language, symbols, and graphs;
5. Reason mathematically by gathering and analyzing data and information;
6. Connect mathematical ideas and ideas in other subjects.

The standards require all students to study five mathematics topics—sometimes called “strands”—as they move from kindergarten through seventh grade. Each topic area, described below, is rich with learning opportunities. Students delve deeper into the strands as they advance through the grade levels.

- **NUMBER SENSE:** Number sense means learning to compute—add, subtract, multiply, and divide—and to understand the concepts behind those skills.
- **GEOMETRY AND MEASUREMENT:** Concepts in two- and three-dimensional geometry and measurement help students visualize and explain the world around them.
- **ALGEBRA AND FUNCTIONS:** Through algebra, students learn to translate concrete experiences into abstract equations and formulas.
- **STATISTICS AND PROBABILITY:** Statistics and probability are the mathematics of prediction, which enables students to use mathematics to plan ahead.
- **MATHEMATICAL REASONING:** Using mathematical reasoning, students bring together a variety of skills, strategies, and knowledge to solve new and unfamiliar problems in mathematics and other subject areas.

## STANDARDS: MORE THAN ARITHMETIC

Recent national and international studies have shown that students need to learn more than paper-and-pencil arithmetic to thrive in our increasingly complex and technology-rich world. Learning to use and understand step-by-step procedures to solve a variety of problems is an important part of standards-based mathematics instruction today. It is also important for students to learn how to communicate with others about numbers.

These key ideas have changed the way mathematics looks in school—so if you don’t recognize the math your child is learning, don’t be surprised.

Arithmetic skills, although still critical, are no longer enough for students who will graduate into a world marked by advances in science and technology and by changing workplace expectations. So in addition to learning arithmetic in math class, your children will be asked to:

- Solve real-life problems;
- Explain their thinking to others;
- Identify and analyze trends from data;
- Create graphs, charts, and other representations of information;
- Use modern technology to solve mathematical problems.

Instead of math worksheets, your child may have homework that is related to real life—investigating salaries, charting life expectancy, or creating a fictional personal budget. This kind of learning is strongly tied to the six key ideas that frame the state’s mathematics standards. It builds on and develops student learning in the five strands that are outlined in the standards.