



HELPING YOUR
CHILDREN
LEARN AND ENJOY
MATHEMATICS

GETTING READY FOR KINDERGARTEN AND BEYOND

Kindergarten is an important time in children’s lives. A good start in kindergarten can make an important difference in success throughout the early grades and beyond. Parents know this and often ask, “How do I know if my child is ready for kindergarten?”

Kindergarten readiness in mathematics is not as simple as checking off a set of basic skills—success often comes from higher-level math practices rather than simple skills. A better way to predict if your children are ready for kindergarten is to know what they will be asked to do on a daily basis in kindergarten.

California, as well as most of the other states, has adopted a uniform set of standards for mathematics, kindergarten through high school. These standards, called the *Common Core Mathematics Standards**, list specific skills by grade. They also list *Standards for Mathematical Practice* that broadly describe qualities children must have in order to do well in math.

EARLY GRADES VERSION OF THE COMMON CORE STANDARDS FOR MATHEMATICAL PRACTICE

1. Students who do well in math try hard to make sense of a problem, find a way to begin a new problem, and keep working even when a problem is difficult. When they think they have solved a problem, they think about whether an answer makes sense. If other children did the problem in a different way, they listen to their solutions and try to understand them.
2. Students who do well in math use numbers in real and abstract ways. They are able to think about numbers and their relationships in imaginary and actual situations. They consider the size and meaning of numbers in different situations, and apply this “number sense” in solving problems. Good math students make sense of a problem and apply all the math they know to consider if their answer makes sense.
3. Students who do well in math use all the information they have, and all the math they know, to find answers. They make good guesses and apply logical thinking to explore and test their ideas. They can use objects such as counters, diagrams, drawings, and sound thinking to explain how they arrive at their answers. They ask good questions and listen carefully to the ideas of other students.



Photo by Paul Giganti, Jr.

4. Students who do well in math solve problems they encounter in preschool, at home, and in their daily life using mathematics. They use drawings, pictures, diagrams, blocks, counters, coins and, when possible, writing simple equations to make models of situations and problems they encounter.
5. Students who do well in math consider all the math tools available to them for every problem-solving situation, including objects, paper and pencil, number lines, models, shapes, measurement tools, and simple calculators. They carefully choose the best tools for the job and use those tools in the right way to solve the problem.
6. Students who do well in math try to be clear when they share mathematical ideas with others by using the best vocabulary, numbers, and math symbols they know. They try to make sure the math work they do is correct and, when they find an error, they redo their work to get the best possible answer for each problem.
7. Students who do well in math try to discover and observe patterns in mathematical situations. They use their understanding of the base 10 system and geometry to see how numbers and shapes work together, and how order and patterns can help them solve problems in math. Good students can see the big picture AND pay careful attention to the individual facts and numbers in problems.
8. Students who do well in math notice when things happen in math problems again and again, and are creative—or find shortcuts—in solving problems. Good students apply what they have learned in similar problems and continually check their progress as they work. They use their experience, knowledge, and observations to solve new problems more quickly.

When you read these new Standards, keep in mind that these personal qualities and abilities are not required of your children to enter kindergarten; they are goals for all learners to work on as they study mathematics in school from kindergarten through 12th grade.

Although the *Standards for Mathematical Practice* will ask a great deal of students, parents should remember that young children can begin to learn these qualities in their natural environment and through everyday interactions. To build a sound foundation of mathematical thinking, children need many hands-on math experiences and opportunities to learn by doing—without pressure. The most important things children need before entering kindergarten—apart from the required maturity—are that they be comfortable with solving problems and enjoy math!

*To read more about the *Common Core Mathematics Standards*, go to:

www.corestandards.org

MATH IS MORE THAN ARITHMETIC

When most adults think about mathematics, the first things that come to mind are addition, subtraction, multiplication, and division—what we call arithmetic. We think of these concepts first because they are the basic skills we adults use every day. So it seems natural to many parents to teach their children arithmetic as soon as possible. However, beginning basic math skills for very young children are very different. The world of mathematics for children who are 0–5 years old is all about shape, size, location, pattern, and how many. To young children, math is so much more than arithmetic!

You may be able to teach your young children how to add two numbers together the way you learned, but, if they are not ready to understand the math behind the procedures, pushing them too soon may hurt rather than help their overall early math learning. Focusing on arithmetic for young children is like building a house without a foundation. This booklet highlights the early mathematics your children should first experience to build a sound foundation in mathematics—before learning arithmetic.

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