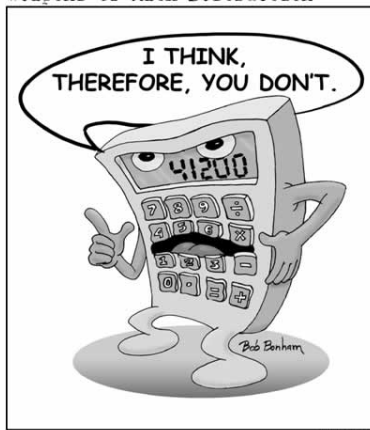


## Nothing Fuzzy About Columbia's Math

In September 2006 the Wall Street Journal published an article describing the latest report from the National Council of Teachers of Mathematics, which urges a return to the basics in teaching math.

Ironically, it was a 1989 report from the same council that steered educators in a new direction with statements like, "The calculator renders obsolete much of the complex pencil and paper proficiency traditionally emphasized in mathematics courses." The council promoted open-ended problem solving over drilling, and suggested that students begin using calculators in class as early as Kindergarten. Teachers were advised to promote estimation rather than exact answers, so that a student could determine if the correct keys had been pressed on the calculator. Many educators were horrified. Apparently, the idea was to keep up with technology and get away from rote learning, which some believe does not give students an understanding of concepts or the ability to solve real problems.

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I believe that the council's 1989 suggestions, which are said to have been widely misunderstood and were never intended to eliminate the fundamentals, had some validity. Memorizing math facts and solving written equations is a nutritious part of a complete math program. Students should also understand the reasoning behind the processes and be able to apply what they learn in real-life situations.

When I was in grade school I learned how to "carry numbers" when adding and "borrow" when subtracting, but I don't recall ever seeing physical models to demonstrate our base 10 numbering system – which would have helped me understand what I was doing. I memorized multiplication tables so that I could pass tests, not because I thought I would ever need the information outside of math class. While I was somewhat apathetic, today I'm glad that I learned what I did; I use a calculator as a time-saving tool, not because I'm incapable of solving problems without one. But clearly, the delivery lacked.

So, how do you bring it all together? How do you give students a strong foundation in the basics while teaching them to think creatively and solve real problems? How do you give them a purpose for learning math and avoid the apathy?

**Columbia has had the right approach all along.** Our curriculum was designed to provide a rich and complete program that engages students and prepares them for success in the real world. Math is introduced at the Pre-K level with numeral identification, counting, games and more. They have fun learning the concept of basic addition and subtraction with manipulatives, and can solve simple written and verbal problems. The light is already on!

As they advance through the grades, students learn counting-by's and drill Math Facts on the computer to improve mental math skills and develop quick recall. The completion of each Math Facts level is acknowledged as an achievement, so confidence and enthusiasm grow.

Daily math periods begin with a group seminar where new concepts are demonstrated and related to real life. New words are defined and the students are always involved in the discussion. Any confusion is cleared up early on. Seminars often culminate with a game designed for the students to apply and practice what they have just learned. They love it! Then there are written exercises. Neatness and accuracy are encouraged and rewarded. Any errors must be corrected to ensure 100% comprehension of the material before progressing to the next lesson. No furrowed brows and head scratching; it's a wonderful recipe for success.

When we see California Achievement Test results placing Columbia Academy students 1½ to 5 years above the norm in the mathematics category, we figure we must be doing something right. When I see a student joyfully *skipping* to math class, a homemade bookmark that reads "I LOVE MATH" and every hand in class shooting up to answer a math question... I know we're doing something right!

— Michele Wittig

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petitions are being circulated and websites such as this one: [www.weaponsofmathdestruction.com](http://www.weaponsofmathdestruction.com) have been deployed in an effort to "peacefully disarm fuzzy math." Enrollment in private and charter schools continues to rise.

In 2003, a study ranked U.S. students 15<sup>th</sup> in eighth grade math skills, behind countries including Singapore, South Korea, Hong Kong and Australia. According to the National Science Board, one in five U.S. college freshmen now requires a remedial math course.