What Works Better than Traditional Math Instruction
I watched the children as they struggled to solve the problem mentally. They were extremely quiet. Some of them were ... in rhythm to the numbers. A few manipulated their fingers, and one child was biting his lip and looking quite puzzled.

The still-dominant Old School model begins with the assumption that kids primarily need to learn "math facts": the ... for all kinds of problems — carrying numbers while subtracting, subtracting while dividing, reducing fractions to

On a smaller and more informal scale, the constructivist theorist Constance Kamii has tested a few elementary classrooms ... discovered that two constructivist second-grade classes did about as well as two conventional classes on a standardized

and in-depth interaction occurs." The additional year in such a setting did indeed make a difference. Many different ... performance for traditionally instructed students than for those who had had two years of alternative math. The latter

about conceptual approaches to math. The idea of reading for understanding is clear enough (few adults, after all, spend ... understanding?

We think of math as a subject where you churn out answers that are either right or wrong,

Moreover, they persisted at difficult problems to an unusual degree and took pleasure in one another's successes.

Consider a classroom where third graders open their math textbooks to the contrived "word problems" on page 39. ("A ... of two pieces of bubblegum (with and without sugar) before and after each piece has been chewed — making predictions,

It is a pity that such teachers, known from the start to be determined to teach kids in drills and drills and drills, get to have a year to work in a more open-ended environment before they have to face up to the world of "real math." If they are then assigned to teach kids in drills and drills and drills for the next five and a half years,

Recall that these conclusions precisely mirror those of the National Assessment of Educational Progress (NAEP), the major ... in the upper elementary grades, which found that "heavy emphasis on skill development and slight attention to concepts

Because "teaching" is equated with direct instruction in the minds of many traditionalists, the absence of that ... integrally involved. She sets things up so students can play with possibilities, think through problems, converse and

What an important idea that is: that over time, children can become what Vygotsky called "intermediate learners," or those who can solve problems but understand the idea behind the method.

Math educators are constantly finding examples of how kids can do calculations without really knowing what they're doing. Children given the problem

The key question is whether understanding is passively absorbed or actively constructed. In the latter case, math actually becomes a creative activity.

From Chapter 9: "Getting the 3 R's Right"