Doing the Math: It’s More than Numbers

Because few elementary and middle school principals are trained as mathematicians, understanding, implementing, and assessing quality mathematics instruction in their schools takes time and effort for many of them, especially in the early grades.

The days when children in their elementary years spent hours memorizing basic math facts are long gone. To reach the proficiency levels expected on state and national exams, today’s students need a strong understanding of underlying math concepts before moving up to algebra, geometry, and advanced math in the middle grades.

Understanding the Big Picture

For principals, being an instructional leader means understanding the larger context of why the higher math skills being taught in today’s classrooms are necessary and useful in the workplace and in everyday life. A command of the big picture also offers a convincing way for principals to remind teachers why aligning instruction to math standards is so important and why having their students meet academic goals beyond those required by a state test or a national accountability system is essential.

You should be familiar with the state math standards that your students are expected to meet or surpass, and what they will be expected to know when they move up to the next level. Connecting that knowledge to a strong understanding of how the standards fit real-world demands can provide a solid foundation for building a high-quality math program.

Start with Your Staff

Finding teachers with a solid handle on math can be challenging. Research has found that many elementary and middle grades teachers don’t feel as comfortable with their math knowledge as with other subjects. That’s why, as school leaders, you have to be aware of your faculty’s training and subject-area strengths. In your classroom visits, observe how well teachers help students master basic math concepts by helping them take math problems apart, explain why their solutions are reasonable, and understand the skills needed for different types of problems.

A clear knowledge of your staff strengths and a strong handle on math expectations can direct you to professional development options that will move teachers toward higher levels of both math competency and teaching ability. NAESP provide an excellent resource, What Principals Need to Know About Teaching Math (available at www.naesp.org/nprc). It’s filled with sound ideas for training and supporting a school staff in math instruction. Another good resource is a bank of questions, scoring guides, and student responses from recent National Assessment of Educational Progress exams, available online at nces.ed.gov/nationsreportcard/mathematics/results2003/.

Math Is Everywhere

Ultimately, the objective of a high-quality math program is to demonstrate to students the practicality of what they are learning. That’s why math instruction, especially in the elementary grades, needs to be full of interesting and challenging hands-on activities and projects that involve finding solutions to practical problems.

Encourage teachers to expose children to real ways that math is used in familiar activities, like estimating how big a birthday cake is needed for 20 people, or recognizing the relationship of the numbers that fly by on a gas pump, showing the amount going into the tank multiplied by the price per gallon.

Math is everywhere in the real world. It measures the beats and bars in a piece of music and is intimately linked to science, economics, engineering, and many other professions. Encouraging teachers to make math connections across other school subjects helps children see how it relates to the world around them rather than being an isolated body of knowledge.

But as important as math is in today’s schools, where considerable emphasis is being placed on math and reading because they are the subjects measured by the No Child Left Behind regulations, principals shouldn’t shortchange other important subjects. Many of the strategies for building a better math program could also apply to history, science, and the arts.

Even as principals demand content and instruction that ensure student achievement in math, it’s important to realize that this is part of a larger effort to get your students ready to succeed in a challenging world.