Dimension 10: Teacher's Attitude and Comfort With Mathematics

This dimension is about how a teacher's attitude and comfort with mathematics are linked to how and what they teach and the environment in which students learn.

ATTITUDE

Some teachers inadvertently signal to students a less than positive attitude toward math. Naturally, this attitude can interfere significantly with students' efforts and willingness to learn the subject and can contribute to math anxiety. Teachers may, for example, convey to students some commonly held misconceptions about mathematics such as the following:

- Math is hard and only some students are likely to be successful in learning mathematics effectively.
- Math is inherently unpleasant or not as interesting as other disciplines.
- There is no room for creativity in mathematics; unorthodox ideas and approaches are not to be encouraged.

A teacher who openly enjoys math models the positive attitude that students need to emulate in order to do well in mathematics.

COMFORT WITH MATHEMATICS

Sometimes teachers have deficits in their own mathematical understanding that inhibit their ability to effectively assist students in making important mathematical connections. In addition, they sometimes mislead students by erroneously assessing their responses. For example, if a student answers in an unexpected way, a teacher may not be aware that this alternative is indeed correct and may unintentionally undermine student confidence and knowledge.

Teachers who are comfortable with the subject matter can also make more effective planning decisions as far as integrating strands and working with key concepts as these teachers are aware of the connections. These teachers also understand the richness of math and the value of all its strands and are less likely to compromise the teaching of, say, probability, to spend more time on operations practice. They are also more comfortable with exploration-style activities because they are prepared for the unexpected solutions and directions that students may take.

Teachers who are comfortable with the math are better able to explain to their students why they are learning mathematics. These teachers are aware of the connections to and usefulness of math in the real world.

HOW THE ADMINISTRATOR CAN SUPPORT THE TEACHER

The administrator can help the teacher in this dimension by

- making professional journals readily available to teachers
- supporting teachers who seek courses or other professional development opportunities to learn more about mathematics and mathematics education
- supporting teachers who feel overwhelmed with math content by arranging team-teaching or mentoring opportunities
- be proactive with respect to dispelling misconceptions about mathematics by encouraging open discussions about them among staff
- providing time for focused professional discussion of specific mathematical topics during staff meetings

LINKING THE NCTM PRINCIPLES AND STANDARDS

This dimension addresses the *Teaching* principle by acknowledging that, to be effective, teachers must understand the mathematics they are teaching to allow them to be more effective in meeting students' needs by being resourceful, flexible, and creative in the way they teach (see page 4 in Section 1).

PRIMECONNECT

Background and Strategies

This book in each mathematics strand of PRIME provides teachers with the background information necessary to understand the mathematics they must teach to address the Kindergarten to Grade 6 curriculum.

(See page vii.)