What Should I Look for in a Math Classroom?

A math classroom should provide practical experience in mathematical skills that are a bridge to the real world of jobs and adult responsibilities. This means going beyond memorization into a world of reasoning and problem solving.

Sounds good, but how will I recognize a good math classroom when I see it?

Look for the following actions by students and teachers. If you see them, you will be looking at a classroom that is preparing students for the world and beyond.

What Are Students Doing?

- *Interacting with each other,* as well as working independently, just as adults do.
- Using textbooks as one of many resources. Students should know how and when to use *manipulatives* (such as blocks and scales) and *technology* (such as calculators and computers) *as problem-solving tools*.
- Applying math to real life problems and not just practicing a collection of isolated skills. Lots of time is allowed for *solving complex problems*.
- Seeking a best solution among several solutions to a problem. Students can explain the different ways they reach these solutions, and defend the choice of one over another.
- Working in groups to test solutions to problems with each group member highly involved.
- *Communicating mathematical ideas* to one another through examples, demonstrations, models, drawings, and logical arguments.
- *Working in teams to challenge and defend possible solutions*. Students help each other to learn.

What Are Teachers Doing?

- Guiding students in *exploring multiple solutions to any problems*; challenging students to think deeply.
- *Moving around the room* to keep everyone engaged in productive work. They are not glued to the chalkboard.
- Encouraging students to *raise and discuss questions* about math for which there are no textbook answers. Rather than simply answering these questions, teachers are helping students to gain mathematical competence and confidence by finding their own solutions.
- Guiding students in making appropriate use of *manipulatives and technology*.
- Promoting student use of *inquiry and creativity*. Students are moved to higher levels of learning by pursuing alternative approaches to solving a problem or by proposing new problems that are variations on, or extensions of, a given problem.
- Bringing a *variety of learning resources*, including guest presenters, into the classroom in order to increase learning options for all students.
- Working with other teachers *to make connections between disciplines* to show how math is a part of other major subjects that students are studying.
- Using assessment that *focuses on problem solving and understanding* rather than on memory and speed.
- Helping all students to explore career opportunities that use the mathematics that they are learning.