

What to see in the Mathematics Classroom...

STUDENTS who are:	Rather than:
Working together solving problems with real-world applications of mathematical concepts	Doing problems in isolation
Actively engaged in mathematics through reading, writing and oral communication	Sitting and listening
Communicating mathematical concepts to one another	Finding answers alone
Reasoning through problems to reach solutions	Memorizing procedures
Listening to one another and questioning each other	Answering only teacher questions
Using technology for exploration and insight	Using technology for simple calculations

TEACHERS who are:	Rather than:
Engaging students in concepts through investigations and discovery learning	Emphasizing correct answers
Using questions such as "why", "explain", "justify", "elaborate", to draw out higher level thinking	Telling and explaining
Using multiple representations to relate skills and symbol manipulations to functions, tables, and graphs	Emphasizing rote multi-step manipulations
Making connections and building upon previous knowledge in mathematics and other disciplines	Talking about mathematics in isolation
Facilitating and guiding learning through questioning, monitoring, and evaluating	Disseminating knowledge
Assessing student achievement in multiple ways including reports, demonstrations, projects, portfolios, performance assessments, tests (both oral and written), and total physical response for English Language Learners	Relying solely on written tests
Using assessments to guide instruction and evaluate students	Assessing to assign grades
Grading students using rubrics that are clearly understood by all students	Grading using unclear or undefined criteria
Planning with objectives, expectations, and assessments in mind	Following the textbook

8 Standards of Mathematical Practice

<u>Practice:</u>	<u>Kid Friendly Language:</u>
1. Make sense of problems and persevere in solving them.	When given a problem, I can make a plan, carry out my plan, evaluate its success, and try again if needed.
2. Reason abstractly and quantitatively.	I can take numbers and put them in a real-world context. I can take numbers out of context and work mathematically with them.
3. Construct viable arguments and critique the reasoning of others.	I can construct, justify, and communicate arguments. I can critique the reasoning of others.
4. Model with mathematics.	I can recognize math in life. I can use math I know to solve problems in a variety of ways.
5. Use appropriate tools strategically.	I know how and when to use tools to help me explore and deepen my math understanding.
6. Attend to precision.	I can solve problems accurately and efficiently. I can communicate my ideas using clear, mathematical language.
7. Look for and make use of structure.	I can break problems into smaller pieces to see the whole. I can look at situations in more than one way and use what I already know to learn something new.
8. Look for and express regularity in repeated reasoning.	I notice similarities within and between problems. I look for patterns and draw conclusions. I ask myself if my answer makes sense.