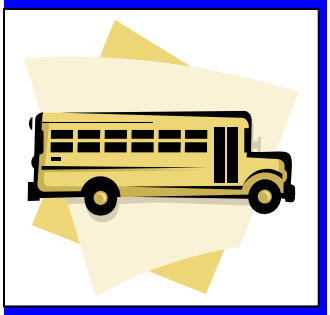
Math Facilitator Newsletter

C. D. L., Math Facilitator
Maxwell AFB Elementary School



What Is The Math Facilitator?

Facilitators collaborate with mathematics teachers to improve instruction through intensive in-class professional development. They focus on assisting teachers to understand important mathematical concepts and student thinking about those concepts. They also help teachers develop techniques to support all students. The Facilitator also works with teachers outside of the class, sometimes in teams or one to one, to discuss student work, mathematical concepts, lesson planning, data collection and analysis, and other professional development experiences. Facilitators also provide direct instruction to students chosen for additional support.

Fundamental Ideas for High Quality Mathematics Education

- Mathematical literacy is essential for every child's future.
- A solid mathematical education is essential for an informed public, our national security, a strong economy, and national well being.
- All students can be successful in mathematics and should receive a high-quality mathematical education, regardless of gender, ethnicity, or race.
- Teachers should encourage and inspire every student to continue the study of mathematics
- Developing mathematical proficiency requires a balance and connection between conceptual understanding and procedural and computational proficiency.
  Problem solving and using mathematics to understand our world is an integral part of all mathematical learning.

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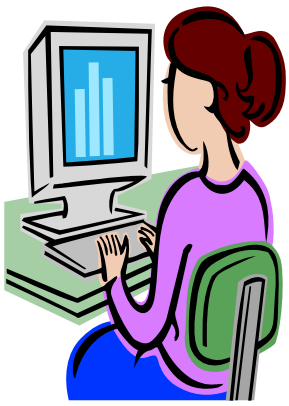

Why Do We Teach The Way We Do?

The world today is much different from that of even a few years ago. We are all bombarded with data that must be absorbed, sorted, organized and used to make increasingly crucial decisions. The underpinning of everyday life, such as making purchases, choosing insurance or health plans, and planning for retirement all require mathematical competence. Business and industry demand workers who can solve real- world problems, explain their thinking to others, identify and analyze trends in data, and use modern technology.

Strands of Mathematical Proficiency

1. **Understanding** (Conceptual Understanding): Comprehending mathematical concepts, operations, and relations - knowing what mathematical symbols, diagrams, and procedures mean.
2. **Computing** (Procedural Fluency): Carrying out mathematical procedures such as adding, subtracting, multiplying, and dividing numbers, flexibly, accurately, efficiently, and appropriately.
3. **Applying** (Strategic Competence): Being able to formulate problems mathematically and to devise strategies for solving them using concepts and procedures appropriately.
4. **Reasoning** (Adaptive Reasoning): Using logic to explain and justify a solution to a problem or to extend from something known to something not yet known.
5. **Engaging** (Productive Disposition): Seeing mathematics as sensible, useful, and doable- if one works at it-and is willing to do the work.

Frequently Asked Questions

Do students still need to learn how to compute with paper and pencil now that calculators and computers are available?

Yes, the widespread availability of calculators has greatly reduced the need for performing complex calculations with paper and pencil. But students need to understand what is happening in these complex calculations and they still need to learn to perform simple computations with pencil and paper because that helps them develop math proficiency. For example, a certain level skill with basic number combinations is needed to understand procedures for multiplying two-digit numbers and computational fluency is often essential in solving problems in algebra and explaining their solutions. How much instructional time should be spent on complex pencil-and-paper calculations is a question that will need to be continually revisited over the next decade.