21st Century Skills for Teachers and Students

The Intel Math Program supports K-8 teachers in deepening their own understanding of rigorous mathematics.

Teachers today face complex challenges - challenges that demand preparedness in implementing creative and innovative solutions in the classroom. To meet these demands, teachers must continually improve their skills and knowledge. The foundation of the Intel Math Program is built on developing fluency with: problem solving, critical thinking, deep conceptual understanding, accurate and efficient procedural manipulation, collaboration, and creativity.

Intel Math is an eighty-hour course for K-8 teachers who teach math. The course is co-facilitated by a practicing mathematician and a math educator. The emphasis is on teachers deepening their understanding of math.

Intel Math examines the arithmetic, geometric and algebraic aspects of: operations, number theory, place value, rates, rational numbers, linear equations and functions through problem solving.

Classroom transfer is addressed through instructor modeling and analyzing student work.

Teacher graduates have commented:

"My ability to explain why to my students has increased."

"I've calmed down on the testing and now I'm really teaching."

"I thought I knew math but now I really understand math."

"I wish this program would be required for all teachers."

Intel Math offers free professional development for teachers to provide the knowledge they need to improve student mathematical understanding.

Intel Math Course Philosophy

Mathematics is problem solving; and learning is best achieved by doing. Hence, teachers spend most course time doing mathematics. Instructors value teachers' experience by building upon their prior knowledge while staying true to the mathematics. Emphasis is placed on developing a safe collaborative learning environment. Rich mathematics problems, in familiar contexts, are posed and revisited with increasing rigor. Teachers are afforded time, tools, and support to make deeper sense of mathematics.

Intel Math Course Structure

The Intel Math course was authored by Vermont mathematician Dr. Ken Gross. His decade long work with this curriculum has been tied to improve student performance in math. Intel Math results show significant increases in teacher math content understanding and math decision-making in the classroom.

The course is structured around many themes, including:

- Mathematics is problem solving
- Arithmetic, geometry, and algebra are not separate subjects
- Mathematics is a second language with many parallels to English
- There are many ways to solve problems
- Leverage and build upon existing knowledge
- Collaboration is imperative

More Information

2010 Instructor Training in DC, 6/28-7/1
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Intel Math Program Essentials

The Intel Math course is currently available for use in any school system providing no profit ensues. Other criteria include:

- Dual facilitation by:
  - Mathematician (PhD level)
  - Math educator (PD/Methods level)
  - Completed a 4-day training course
- Complete 80 hours within one semester:
  - ~40-50 hours summer session
  - ~30-40 hours fall sessions
- Course composition
  - 90% content and 10% pedagogy
- Teacher requirements:
  - K-8 non-math majors
  - Committed to homework
  - Assessment participation
- District requirements:
  - Provide facility, Elmo, materials
  - Recruit and compensate teachers
- Sponsor requirements:
  - Compensate instructors
- Intel commitment:
  - Evaluation, curriculum, and instructor training