**Workshops**

**Possible Workshop Topics**

**Math Problem Solving: Taking the Problem Out of Math Problem Solving (elementary or middle grades)**
This session provides practical instructional strategies for helping students develop the critical thinking skills that allow them to be successful math problem solvers. Topics include:

* identification of the critical skills needed to be an effective problem solver
* techniques to introduce, develop, and reinforce critical problem-solving strategies
* ideas for visual demonstrations and hands-on activities
* teacher questioning techniques that develop students’ problem-solving skills
* ideas for simplifying problems for at-risk students and adding complexity for high-achieving students

Instructional strategies will focus on ways to reach ALL students.

**Writing and Talking About Mathematics: Essential Tools for Developing Math Understanding (elementary or middle grades)**
This workshop explores strategies to develop students' abilities to talk about and write about their mathematical thinking. Topics include:

* activities to develop students' math vocabularies
* strategies to assist students in explaining, justifying, and describing math processes
* feedback techniques to improve the quality of students' written explanations

An emphasis will be placed on easy-to-implement, practical activities that can be integrated into the existing math program.

**Differentiating Instruction in the Math Classroom (elementary or middle grades)**
This session addresses a variety of techniques for differentiating instruction to meet the needs of all students in the math classroom. Topics include:

* modifying instruction through flexible grouping
* conducting mini-workshops to reteach or enhance skills/concepts
* the use of cooperative groups to allow for differentiation
* designing math centers to address varied skill levels
* selecting appropriate math tasks
* techniques for modifying math tasks to better meet the needs of varied levels of students (including resources to efficiently modify tasks)

This workshop explores the varied ways that teachers can differentiate instruction, support varied learning styles, and modify math tasks in order to better meet the needs of all learners in their classrooms. Guidelines for modifying math tasks are shared.

**Mastering Basic Math Facts (elementary grades)**
Mastering basic math facts is a foundational skill and yet many students struggle with mastering their basic math facts. This session provides a wealth of practical tips for helping students understand basic math facts and commit those facts to memory. Topics include:

* techniques for developing an understanding of the operations
* ideas for visual demonstrations and hands-on activities
* techniques to help students develop strategies to find answers for unknown math facts
* engaging practice tasks that help students commit math facts to memory
* quick tips to make mastering basic math facts doable for your students

This session can focus on addition/subtraction or multiplication/division facts, or the session may be split with half day for each.

**Exploring the Algebra Standard: Building the Foundation (elementary or middle grades)**
This session explores critical skills for student success with algebra. While we used to think of algebra as high school content, we recognize that many algebra skills are introduced at the elementary and middle grades level and provide a foundation for algebra success at the high school level. Session topics include:

* recognizing relationships between numbers
* understanding mathematical operations
* understanding and describing patterns and functions
* making connections between algebra and data analysis
* applying algebra concepts to problem-solving activities
* differentiating algebra tasks

This session builds teachers’ understanding of foundational algebra skills and provides engaging classroom activities designed to strengthen students’ skills.

**Strategies for Reaching Struggling Math Students (elementary or middle grades)**
This workshop explores strategies, tools, and approaches to teach, support, and motivate reluctant or struggling students. A wealth of ideas that are designed to fit into the existing classroom program will be shared. Topics include:

* quick reviews to support student retention
* interactive activities to assist students' understanding and memory of basic math facts
* easy-to-implement ideas for strengthening students' understanding of math vocabulary
* hands-on activities for helping students tackle word problems
* techniques for modifying math tasks to better meet the needs of struggling students

There is no single instructional approach that will work for all students all of the time, so the goal of this seminar is to expand each teacher's repertoire of approaches for developing students' computation and reasoning skills.

**Teaching Mathematics for Understanding (elementary or middle grades)**
In recent years math educators have realized the importance of moving beyond correct answers in mathematics and moving toward the understanding of math concepts. This workshop focuses on instructional strategies recommended in the National Council of Teachers' of Mathematics' (NCTM) Standards 2000 and provides an overview of recent changes in math instruction. The workshop offers practical strategies to help all students understand mathematics. Workshop topics include:

* discussion in math class
* group and partner work
* writing about math
* problem-solving focus
* the role of manipulatives and visual representations
* differentiating instruction

This workshop offers an overview rather than in-depth discussions of the topics. Multi-day sessions can be designed to allow for more in-depth participation and discussion of the content.

**Teaching Math Concepts through Children’s Literature (elementary)**
The use of math literature allows students to see math concepts "in action" and assists them in developing understanding of those concepts. Workshop topics include:

* practical ideas to assist teachers in selecting appropriate literature for integration with math content objectives
* activities in various math domains to illustrate the value of introducing concepts through literature
* instructional strategies for before, during, and after-reading including hands-on tasks that extend students’ understanding of the math concepts

An extensive bibliography will be shared to assist schools/districts in gathering appropriate literature to match their math content standards.

**Increasing Your Effectiveness as a Math Coach (coaches of elementary or middle grades teachers)**
This workshop provides a wealth of tools and strategies to support math coaches in their efforts to increase math achievement within their schools or districts. Topics include:

* observation and conferencing tips
* tools for facilitating faculty discussions
* ideas for providing effective professional development sessions
* techniques for analyzing school data
* math content and coaching resources

Coaches will discover ideas that can be immediately used. Many resources, tools, and strategies will be shared to assist coaches in promoting positive change within their buildings.