

Students can Make the Grade and Pass the Test using Effective Problem-Solving Skills

Discover a **classroom-tested plan** to incorporate rich problem solving into every area of mathematics!

A 2-Day workshop for teachers of grades 6 through 12 who want to instill in their students the essential life skill of wise and independent problem solving

Problem solving is essential in *every area* of our lives, *during every day* of our lives. The mathematics classroom provides the ideal setting to teach students the necessary skills to become successful problem solvers, not only in school but in every complex situation they encounter. The goal of all of the computation and processes that we teach in mathematics is to **empower students to effectively and confidently solve problems.**

The truth is that many teachers do not have a plan in place for meaningfully incorporating problem-solving experiences into their mathematics curriculum. They need direction, good problems, effective strategies, and an understanding that **problem solving is the key to their students' success in mathematics** class, on current standardized tests, *and* in their everyday lives.

This workshop provides a well-planned approach to incorporate problem solving into every area of secondary mathematics. Participants will receive literally hundreds of problems that can be immediately used in the classroom, along with sound rationale and methodology for improving their own problem-solving skills, as well as those of their students.

In This Workshop You Will Discover:

What problem solving really is:

- A detailed definition that makes sense
- Moving from definition to practice

Key elements for getting started:

- The defining characteristics of a good problem
- The roles of content, information, and question type in determining a good problem
- Personal qualities of a good teacher of problem solving

An organizational plan for every problem and every student:

- Why George Polya's plan is so helpful
- Effectively using Polya's plan

Practical forms for recording solutions and grading work:

- A student version of Polya's plan with specific guidelines to increase student success
- A guided response form for each problem that can dramatically improve your students' problem-solving skills
- A scoring rubric to assess problem solving (rubric will be provided)
- How an observation checklist can help you grade problem solving in group work

More than 20 specific problem-solving strategies for problems rich in mathematical content:

- Problems to help you achieve more problem-solving success
- Examples and demonstrations

Some fresh and unique problems that will entice your students to ask for more:

- Promote pattern recognition.
- Enhance proper use of vocabulary in unique and interesting ways.
- Delve into a treasure of literally hundreds of problems.

How to convert a mundane problem into a rich one:

- Expanding and/or extending traditional problems to create new, more enjoyable and challenging problems
- Using "What if" to create far-reaching problems that can captivate your students

Where to find even more problems to use in your classroom

- Resource books
- Websites

Try this rich problem before you come to the workshop!...

A square whose area is 4 square units is divided into four smaller squares by joining the midpoints of the opposite sides. A circle going through the centers of each of the smaller squares is formed. Can you draw this picture? Can you find the area of the circle?

The solution to this problem is available at the workshop.



Bill Rogge

The ability to solve problems is the key to success in all of mathematics.

Prime Presentations
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Mathematics
Grades 6-12
2 Days