

**2009 Intermountain Conference on Education of the Gifted
Mini-Strand Proposal Template**

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Presentation Title: Creative Problem Solving in School Mathematics

Overview: This strand highlights problem solving strategies that are included in George Lenchner's *Creative Problem Solving* handbook. Participation in this session will help teachers improve each student's ability to solve problems. Teachers will have the opportunity to try out new approaches and techniques for themselves and gain fresh insights and ideas in meeting the needs of high ability students in mathematics.

Audience Guidance				Time Slot
Primary Grades (K-2)	3	Key	1. This mini-strand will be directly applicable to these grade levels. Teachers at these grade levels will benefit most by attending this mini-strand.	AM
Elementary Grades (3-5)	1		2. This mini-strand will be suitable for these grade levels. Teachers at these grade levels will benefit some by attending this mini-strand because instructors will suggest extensions or adaptations.	
Middle School (6-8)	2		3. This mini-strand could be suitable for these grade levels. However, to benefit, teachers at these grade levels will be individually responsible for determining implications for their own particular teaching assignments.	PM
High School (9-12)	4		4. This mini-strand is likely not appropriate for these grade levels.	

Daily Outlines

Monday	Tuesday	Wednesday
Curriculum/Content	Instruction/Process	Assessment/Product
<ul style="list-style-type: none"> Teaching techniques that have been found to be especially effective in the introduction of problem solving strategies Definition of problem solving Using a four-step method for choosing problems, evaluating problems, and presenting problems 	<ul style="list-style-type: none"> Strategies commonly used in school mathematics and sampling of practice problems for each strategy. Strategies to explore: drawing a picture or diagram, making an organized list, making a table, solving a simpler related problem, finding a pattern, guessing and checking, experimenting, acting out the problem, working backwards, writing an equation, and changing your point of view Applications correlated to best practices, real-world examples, and complex thinking 	<ul style="list-style-type: none"> Problem solving examined in relation to many standard topics of the school mathematics curriculum and the discussion of each topic, followed by a comprehensive set of related practice problems. Topics associated with problem solving: number patterns, factors and multiples, divisibility, fractions, geometry and measurement, and logic. Extensions: Pythagorean Theorem, working with exponents, justifying some divisibility rules, and sequences and series.