

# Ultimate Cosmic Power Enables Students to Really “Get” Algebra in an Itty-Bitty Thinking Space

Implement *standards-based instructional techniques* that are proven to increase both the mathematical understanding and the standardized test scores of students at *all* ability levels.

A 2-day Workshop for middle school and high school algebra and pre-algebra teachers who want to engage students *in conceptual understanding while addressing content standards*.

Is your algebra class nothing more than an intellectual game of hide and seek? When was the last time you asked your students to do anything other than to find a missing  $x$ ? This workshop will *transform your class* from a cognitive scavenger hunt into a *mathematical modeling factory*.

The natural world is full of pattern and function that can be represented in the language of mathematics, particularly algebra. *All* students *can* be taught to read, write and speak this language with understanding. Even the students who *do* algebra may not necessarily *understand* algebra. The time has come to produce students who can do both.

This workshop will go beyond the fluff and the trends, and *empower you with effective tools and techniques* to teach your students what you really want them to know. Discover activities that teach the understanding of concepts and not just the memorizations of algorithms. Receive unique, classroom-tested algebra lessons, ideas, and materials that you can immediately implement. Return to your classroom with original activities for teaching rational expressions, linear equations, quadratics and more!

## In This Workshop You Will Discover:

### Context Matters

- ∄ Don't begin with a naked math problem.
- ∄ Weave a story around the concept.
- ∄ Pull math from a story.
- ∄ Move your students forward by teaching backwards.

### Complexity Matters

- ∄ Elevate your level of questioning.
- ∄ Put Humpty Dumpty together again.
- ∄ Explore challenging sample test questions.

### Multiple Representations Matter

- ∄ There's more than one way to skin a math problem.
- ∄ Ten ways to do one problem, instead of one way to do ten problems
- ∄ Hit 'em where it hurts. It's not *all* about catering to their learning styles.

### Abstract Generalizations are what it's all about

- ∄ Teach students to:
  - ∄ generate their own equations, not just “plug-n-chug.”
  - ∄ formulate ideas, not just memorize formulas.
  - ∄ model the pervasive patterns of the world, as well as solve for  $x$ .
- ∄ What's so great about generalizations?

### Ideas for new math lessons

- ∄ Wallflowers
- ∄ The Piggy Banks
- ∄ The Postman Always Rings Twice
- ∄ Candy Bars, Brownies & Beef Jerky
- ∄ Slice of Pi
- ∄ Tower of Blocks
- ∄ Rule Quest
- ∄ Number Tricks
- ∄ Pool Decks

### The 4-E's of the Mathematics Mission

- ∄ *Empower* your students with fundamental math skills.
- ∄ *Enhance* their problem solving abilities.
- ∄ *Expose* them to the application of the mathematics that they are studying.
- ∄ *Enrich* your students' lives with a greater appreciation for the power and beauty of mathematics and a deeper understanding of its embedded role in the nature of the universe.



Chris Shore

**Finally!**  
**Proven ideas**  
**that help**  
**students**  
**really “get”**  
**algebra**

Prime Presentations  
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Mathematics  
Grades 6-12  
2 Days

New