Nancy Powell

Enhance middle school and high school students' appreciation of their world as they unravel the mysteries of Geometry!

Prime Presentations
(888) 917-3950

Mathematics
Grades 6-12
2 Days

Shape up with Geometry

Euclid was not a square! Discover multi-grade activities and strategies that will prove to your students that Geometry is a relevant and intriguing subject.

A 2-day workshop for middle school and high school teachers of grades 6 through 12 who want to enhance the teaching of geometry with new and innovative techniques

Geometry is all around us and the need to measure and quantify is a daily activity! Many students lack a firm foundation in these essential skills. The good news is that students of all abilities and grade levels can learn to function more easily and appreciate their world by gaining a clear understanding of geometric concepts. At this workshop, you will learn practiced and proven strategies for both concrete and abstract learners from an experienced classroom teacher, who integrates geometry into all areas of math.

Break down the barriers which keep some of your students from succeeding in geometry and measurement. Enrich your own experience through classroom-tested activities that heighten your awareness of the world around you.

Given that proofs are an integral part of formal geometry, a short discussion of strategies for introducing informal proofs to younger students and formal proofs to older students will be conducted, but the emphasis on proofs will be minimal. When you leave the workshop, you will be armed with practical strategies, stimulating activities, ready-to-use student handouts, further resources, and the knowledge you need to effectively teach geometry and measurement concepts.

Workshop Highlights:

New and *clever* approaches for teaching a wide range of topics:

- Definitions of basic terms
- Properties of polygons and circles
  - word derivations of polygonal names
  - formula derivations for angle measures
  - characteristics and classifications of triangles and quadrilaterals
- Constructions via compass and paper folding
  - teaching strategies
  - integration throughout the curriculum
  - use in understanding theorems
- Pythagorean Theorem
- Measurement
  - integrated curricular design
  - measurement sense, estimation, and conversions
  - appropriate use of tools
  - activities and games
- Perimeter, circumference, area, and volume
  - comparisons and contrasts of concepts
  - exploration activities
  - fun with π
  - conceptual development and relationships among formulae
  - experiments, games, and puzzles
- Transformations
  - reflections
  - translations
  - rotations
- Spatial relations in 3-D geometry
- Points of concurrence
- Symmetry
  - line
  - rotational
  - point

Geometry and measurement connections:

- Within mathematics
- With other disciplines
- In the world around us

Conceptual models using manipulatives:

- Geoboards
- Pattern Blocks
- Color Tiles
- Real objects

TI-92 Graphing calculator demonstration:

- Exploring points of concurrence
- Investigating transformations

Demonstration lessons:

- Participants as students
- Lesson simulation
- Problem solving
- Hands-on activities

Questions and answers on the subject of proofs:

- Should proofs be taught? (an honest discussion)
- How do proofs fit into the middle school curriculum?
- What are some practical applications of proofs outside of mathematics?
- What are some alternative formats to two-column proofs?