

**The Schulich School of Education and the Department of Computer Science and Mathematics of Nipissing University are pleased to sponsor**

**Workshops on  
Mathematical Reasoning  
For K-12 Teachers**

**May 17, 18, 19, 2011**

- Presented by Visiting Members of the Greater Birmingham Mathematics Partnership (GBMP – Alabama)
- Organized and Co-Sponsored by NUMERIC
- Intended to Support *Inquiry-Based Pedagogy* in Mathematics Teaching

**Workshop I (May 17, 2011)**

Participants solve challenging and engaging problems both collaboratively and as independent problem solvers, and engage with colleagues in professional discussions around provocative issues. Participants develop and/or deepen their understanding of the following: (1) a variety of patterns that have proven their mathematical power and significance; (2) generalization of patterns using symbols, words, tables, graphs, diagrams, and pictures; (3) robust mathematics to support teachers in development of computational fluency, flexibility and efficiency, particularly with rational numbers. Problem areas are selected from the topics Patterns and Numerical Reasoning.

**Workshop II (May 18, 2011)**

Through solving problems, participants will develop and/or deepen their understanding of mathematical language/vocabulary, properties of shapes and relationships between shapes, ratio & proportional reasoning, relationships between perimeter, area, surface area and volume, what constitutes a mathematically convincing argument, and the essential mathematics of probability, including counter-intuitive situations. Problem areas are selected from the topics Geometry and Proportional Reasoning and Probability.

**Workshop III – Advanced (May 19, 2011)**

Algebra will be presented as a language to describe patterns and model relationships. Participants will develop and/or deepen their understandings of: generalizing patterns using symbols, words, tables, and pictures; symbol sense by building geometric models of equivalent algebraic expressions; proof via counterexample and symbolic reasoning; graph interpretation (including analyzing slope, interpreting intercepts in a given context, and assigning reasonable domain and range in a given context); a variety of functions and relations, representation of functions, and connections among, conversions among, interpretation of, and strengths and limitations of verbal, symbolic, numerical, and graphical representations of functions. Problem areas are selected from the topics Patterns and Extending Algebraic Reasoning.

**Where:** Nipissing University, Room A236

**Times:** 5:30 p.m. – 8:30 p.m.

**Pre-Workshop Dinner:** 4:30 p.m. – 5:30 p.m.

**COST: NO CHARGE**

PLEASE CONTACT YOUR BOARD REPRESENTATIVE TO REGISTER OR DISCUSS THE WORKSHOPS FURTHER. There are limits on total numbers attending.

(Doug Robidoux – NNDSB; Melanie Courchesne – NPSCDSB)

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