

Philadelphia 2016 Topic Strands & Descriptions

New for 2016! All proposal must be submitted to a unique topic strand. See below for strand titles and descriptions:

Connections and Collaborations

Developing a community where mathematics is valued requires a system that supports teachers in their work as professionals. Presentations in this strand will focus on: professional learning experiences for teachers, coaching, professional learning communities, establishing professional networks, and home-school-community connections.

Mathematical Modeling

Modeling is more than using manipulatives to represent a mathematical concept. Students learn and understand mathematics best through application and modeling. The more authentic these situations are, the more deeply the students internalize the content. Presentations in this strand will focus on: problem solving and applying mathematics to authentic scenarios in life, society and the workplace, STEM, project-based learning, using technology to model and judge the validity of results, and establishing connections among multiple mathematical representations.

Eliciting Evidence of Student Thinking

The use of student thinking is critical in the design and implementation of effective mathematics instruction. Creating a positive classroom culture, encouraging productive struggle, and utilizing appropriate and meaningful assessment are essential to eliciting student thinking. Presentations in this strand will focus on: creating a culture in which students appreciate struggle and the meaningful mathematical growth that comes from the process, assessing through innovative and authentic forms, promoting perseverance through task selection, facilitating discourse, and utilizing student thinking to inform instruction.

Access and Opportunity

Culturally, intellectually, linguistically and socially diverse students must have an equal opportunity to attain academic success in mathematics and develop their mathematical identity. Presentations in this strand will focus on how to: empower all students, provide access to high-quality mathematics, inspire confidence in children, address and eliminate opportunity gaps, differentiate instruction culturally, socially, and intellectually, and challenge beliefs and practices to transform individuals and communities.

Effective Teaching

Students must be involved in meaningful learning through individual and collaborative experiences that promote their ability to make sense of mathematical ideas and reason mathematically. Presentations will focus on: selecting and implementing high level cognitive tasks, connecting new learning and prior learning, developing procedural fluency with conceptual understanding, and alternative methods of presenting lessons.

Tools and Technology

Mathematics tools and technology should be integrated into classrooms as resources to help students to reason mathematically, to communicate their thinking and to investigate mathematical ideas. Tools and technology is not limited to mathematical technology, but also includes manipulatives, presentation software and more. Presentations in this strand will focus on: use of tools and technology to help students develop understanding of mathematical concepts and relationships, use of manipulatives, use of blogs and other internet resources, and use of CAS (Computer Algebra Systems), dynamic geometry programs, and other mathematical technology.

Do you have a new, exciting, cutting edge topic that isn't listed above?

Submit to: Hot Topics under strand topics