

## Engage in Mathematics: Making Sense of Trigonometry for Grades 10-12



Featuring *Delta Education* Presenter  
**Polina Sabinin**

**Tuesday, April 3, 2018**  
at the MSAA Office, Franklin

**Sign-In/Registration:** 8:00 am to 8:30 am

**Workshop:** 8:30 am to 3:00 pm

**Fees:** Member \$195/Non-Member \$260

6 Professional Development Hours | PD Content Area: *Mathematics*

Trigonometric concepts are algebraically demanding and appear in *Functions and Geometry* conceptual categories in the High School Common Core State Standards. However, in order to make sense of trigonometry, students must make robust connections between a wide range of preliminary mathematical concepts including fractions, ratios, equations, and geometry, to name a few.

This workshop will address the most common misconceptions and challenges which stand in the way of students' learning of trigonometry with understanding. It will provide hands-on activities for students to fill the gaps and develop conceptual understanding of trigonometry.

In *Principles to Actions*, the 6th Mathematical Teaching Practice is "Build Procedural Knowledge on Conceptual Understanding." Throughout the workshop, participants will be provided with a variety of refreshing Common Core-aligned activities and strategies for use in their classrooms in developing students' Mathematical Practices and stimulating further thought. The consultant will share resources for teachers who would like to explore this topic further.

### Participants will:

- Explore the learning progression of Trigonometry.
- Analyze students' misconceptions about fractions, ratios, and proportions as well as how to select activities which help them correct their thinking while learning trigonometry.
- Examine the most central concepts of trigonometry through hands-on engaging activities.
- Explore a variety of Common Core aligned classroom activities to engage all high school students.
- Experience the "Standards for Mathematical Practice" and "Mathematical Teaching Practices" in action.

**Dr. Polina Sabinin** is an Associate Professor of Mathematics at Bridgewater State University. She is a faculty fellow at the Office of Teaching and Learning at BSU. Through her outreach at the Center for the Advancement of STEM Education at BSU, Polina works with in-service and pre-service teachers at all grade levels. Polina is also the state director for the international Math Kangaroo Olympiad. Polina has served as the Associate Director of the Center for Mathematics Achievement at Lesley University. She is currently co-authoring *LogicGym*, a teacher's manual that introduces students to logic through an engaging visual game. Polina earned her Bachelor of Science in biology with a minor in mathematics from the University of Calgary where she also earned a Master's degree in oncology. Her doctorate research focused on mathematics education, specifically children's development of algebraic and proportional reasoning.

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