

A professional development offering for: Secondary Teachers of Mathematics, with special connections to the vocational setting, Curriculum Leaders, Principals, and Assistant Principals



Engage in Mathematics in Career Areas: Fractions and Proportionality in the Vocational Setting for Grades 9–12



Featuring **Delta Education Presenter Polina Sabinin**

Monday, April 30, 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*

The *Number and Operation - Fractions Domain* is emphasized in Grades 3-5. The *Ratios and Proportional Relationships Domain* is emphasized in Grades 6-7 in the Common Core State Standards. But what do we do with the students who enter high school with fragile, superficial, and procedural knowledge of fractions and proportionality – or worse? This lack of understanding hampers their work in high school mathematics and career areas. This workshop will address the most common misconceptions of fractions, ratios, and proportions. It will provide hands-on activities for students to fill the gaps and develop conceptual understanding of such earlier concepts while continuing to focus on grade 9-12 level work; with special connections to career and vocational areas. 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.

Participants will:

- Explore the learning progression of Number and Operation – Fractions and Ratios and Proportional Relationships.
- Analyze students' misconceptions about fractions, ratios, and proportions as well as how to select activities which help them correct their thinking while staying on grade level.
- 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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