



Cornell University

K-12 Education and Outreach, Mathematics Department

MATH 5080 – Mathematics for Secondary School Teachers

Oct. 27, 2018 ◆ 9:00 am – 2:30 pm ◆ Physical Sciences Building Rm. 401

Presenters: **Jody Magner & Sue McMillen** (Mathematics Dept., SUNY-Buffalo State)

8:45 – 9:00 am **Bagels & Juice (provided)**

9:00 – 9:15 am **Introductions**

9:20 – 10:35 am **Supporting Algebraic Thinking with Number Tricks**

Number tricks can be an engaging tool for developing students' algebraic thinking. Discover the algebra behind a variety of number tricks, create and share your own number tricks, and learn ways to scaffold students as they work with algebraic number tricks.

10:45 am – 12 pm **Tape Diagrams in an Algebra Class?**

Tape diagrams are a mathematics tool introduced in elementary schools. As students progress, their tool adapts for the increasing complex mathematics. Investigate tape diagrams and how one might find them useful in an algebra classroom.

12:00 – 12:30 pm **Lunch (provided)**

12:30 – 1:20 pm **Rocket Math Power!**

A partnership between Buffalo State College and an area high school created the venue for pre-service teacher candidates to work with pre-calculus and algebra students, and their teachers, over the course of a semester. Wanting the mathematics to be more hands on, a rocket project exploring 3-D space and parametric equations was created, allowing pre-calculus students to launch rockets, collect data, and then calculate the apogee (highest point of the rocket's path) and the associated parametric equations of the path of the rocket.

1:30 - 2:30 pm **Card Trick Algebra**

Find mathematical relationships for several card trick situations and then use the equations to show why each "trick" works. Use the card trick context to teach translating narrative phrases into algebraic expressions. Discuss a project in which students create their own card tricks and validate them algebraically.

Register by Monday, Oct. 22, 2018

Registration (required): https://cornell.qualtrics.com/jfe/form/SV_0jpQPYpkV840vE9

Questions? **Mary Ann Huntley** (huntley@math.cornell.edu)