

Strengthening Algebraic Thinking: Instructional Strategies for Middle School Students

Why learn Algebra? The skills embedded in mathematics instruction today are the 21st-century skills needed for the workplace. Students learn the “habits of mind” and problem solving skills needed for college and career readiness. Students with strong math skills will have vast opportunities and options in the job market.

We also know that the fifth and sixth grades, passing all ELA and mathematics courses is correlated with meeting benchmarks on assessments in future grades. Furthermore, beginning in the eighth grade, indicators specify course-taking pathways and benchmark scores on national assessments that relate to future success, such as passing Algebra I and scoring at or above 292 on the National Assessment of Educational Progress (NAEP) in mathematics

{(Wimberly & Noeth, 2005); Predictors of Postsecondary Success, College & Career Readiness & Success Center at America Institutes for Research (November 2013)}

During this five-day institute, teachers will experience student-centered tasks with embedded hands-on activities and strategies to help students develop algebraic reasoning. A key feature of this workshop will be the use of graphing calculators as a tool for learning. The graphing calculator will be utilized to visualize and explore algebra from graphic, numerical, and analytical perspectives, as well as from traditional symbolic representations. Participants will engage in problem-solving situations that present a need for technology.

Participants will:

- Develop techniques for using inquiry-learning for teaching algebraic thinking
- Use patterns to find relationships & investigate relationships, and describe patterns using relationships
- Stretch mathematical knowledge of comparing, constructing, and describing functions
- Analyze change using graphs and tables
- Model and solve problems using graphs, tables, and equations
- Develop discourse and reflection conducive to student-centered learning environments

Audience: Middle School Mathematics Teachers, Curriculum Coordinators

Dates: 2014-15: September 18, October 30, January 27, March 3 and June 11

Location: Carroll Knicely Conference Center, 654 Campbell Lane, Bowling Green, KY 42101

Time: 8:30-3:30 (Central Time)

Registration & Breakfast begin at 8:00 a.m. Lunch is on your own.

Cost: Cost is \$500 per participant including materials

(No cost to participants from these districts due to their participation in the kid-FRIENDLY grant: Adair, Campbellsville, Carroll, Caverna, Cloverport, Daviess, Green, Hart, Henry, Logan, Metcalfe, Monroe Owensboro, Russell, Shelby, Simpson, Spencer, Taylor, Trimble, Union, and West Point)

EILA credit will be available

Registration Form

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Please Print:

Name: _____ District: _____

School: _____ Position: _____

Phone #: _____ Work Email: _____

P.O. # _____ (PO # required for registration except for kid-FRIENDLY districts participants)

- Please check if your district is one of these kid-FRIENDLY participating districts:
Adair, Campbellsville, Carroll, Caverna, Cloverport, Daviess, Green, Hart, Henry, Logan, Metcalfe, Monroe, Owen, Owensboro, Russell, Shelby, Simpson, Spencer, Taylor, Trimble, Union, and West Point

Note: School districts (or schools) will be billed following the activity based upon registration. Please cancel your registration within five (5) working days of the activity to avoid being billed for the fee and to allow another participant the opportunity to attend. Substitutions will be allowed.

Registration Deadline: July 1, 2014

**Fax this completed form to kid-FRIENDLY
Attention: Kim Guffy at (270) 904-0921**

Provided by: RTTd kid-FRIENDLY
Green River Regional Education Cooperative
230 Technology Way, Bowling Green, KY 42101
Phone: (270) 563-2113 Toll Free 1-866-318-6648



Questions?? Contact Kim Estes at 270.563.2113 or kim.estes@grrec.ky.gov