

Mathematics Academy Sessions for 2013-14

Mathematics Academy sessions in 2013-2014 will be expanded to include four sessions for 6th-8th grade teachers. Each series is intended to deepen teachers' and interventionists' skills and knowledge about teaching mathematics. The content of the sessions includes a close look at the significant Common Core standards in each grade, how to teach them for proficiency and understanding, how to assess students' learning to provide on-going support, and how to find time in busy classroom schedules for intervention support as needed.

Special attention is paid to working with students who struggle with mathematics, following the research-based recommendations in the IES Practice Guide, *Assisting Students Struggling with Mathematics: Response to Intervention (RtI) for Elementary and Middle Schools*.

Registration will not be limited by district this year, so anyone who is interested can register.

Each grade band, K-1, 2-3 and 4-5, will consist of three workshops. Participants are required to attend all three to obtain SCECHs for continuing certification. We strongly encourage participants to attend in pairs or teams so that they can observe in each other's classroom and provide helpful feedback, as part of the Teachers Learning Together (TLT) initiative already underway in many middle and high schools.

For more information, contact Theron Blakeslee at Ingham ISD. The cost of these workshops is included in the "block fee."

K-5 sessions are three days. Participants are expected to attend all three days.

The second semester academy is a repetition of the 1st semester, for those who prefer later dates.

Content of K-1st grade workshops:

- Early number concepts – basic activities and assessment resources for counting, more/less and number relationships
- Beginnings of addition and subtraction – the CGI approach of using well-structured problems
- Using strategies as a basis for fluency – the developmental continuum of strategies
- Grouping by tens and early place value concepts – ten fingers, ten toes ☺
- Using "Number Talks" to build mental math and computation strategies
- Using "The Daily 5" during math time to provide intervention support as needed

K-1 dates 1st semester: Oct. 22, Nov. 14, Dec. 9 All sessions are 9:00 – 3:30

K-1 dates 2nd semester: Feb. 5, Mar. 13, Apr. 21

Content of 2nd-3rd grade workshops:

- Extending the place value system to larger numbers
- Extending addition and subtraction to multi-digit numbers – the Concrete-Representational-Abstract approach
- Beginnings of multiplication and division – the CGI approach of using well-structured problems
- Early fraction concepts – activities to make fractions "come alive"
- Using "Number Talks" to build mental math and computation strategies
- Using "The Daily 5" during math time to provide intervention support as needed

2-3 dates 1st semester: Oct. 30, Nov. 21, Jan. 10 All sessions are 9:00 – 3:30 **except Nov. 21 which starts at 9:30**

2-3 dates 2nd semester: Feb. 13, Mar. 20, Apr. 17

Content of 4th-5th grade workshops:

- Extending multiplication and division to multi-digit operations – more than “the standard algorithm”
- Estimation and judging the reasonableness of answers – Using “Number Talks” to extend mental math and computation strategies
- Ensuring whole number fluency
- Introducing decimals in the place value system
- Problem solving with fractional quantities – proficiency with addition, subtraction, and multiplication of fractions
- Geometry of shapes
- Algebraic thinking – connecting geometry with algebra

4-5 dates 1st semester: Nov. 5, Dec. 3, Jan. 28 All sessions are 9:00 – 3:30

4-5 dates 2nd semester: Feb. 20, Mar. 27, Apr. 23

6th-8th grade Mathematics Academy

Sessions are independent of each other. Participants can register for one or more sessions.

Session 1 Oct. 29, 2013 8:30-3:00

- Problem-solving using operations with fractions, decimals and percents

Session 2 Nov. 22, 2013 8:30-3:00

- Problem-solving using operations with integers
- Developing fluency with whole number multiplication and division

Session 3 Dec. 13, 2013 8:30-3:00

- Using ratios and rates in proportionality situations
- Representing real-world situations with algebraic expressions and equations; solving equations; graphing to find solutions

Session 4 Jan. 14, 2014 8:30-3:00

- Solving problems involving area, volume and surface area
- Understanding geometrical relationships involving shapes and angles
- Use statistical measures to represent data; understand probability concepts

The content of the sessions includes the significant Common Core standards in each grade, how to teach them for proficiency and understanding, and how to assess students' learning to provide on-going support.

Special attention is paid to working with students who struggle with mathematics, following the research-based recommendations in the IES Practice Guide, *Assisting Students Struggling with Mathematics: Response to Intervention (RtI) for Elementary and Middle Schools*.

We will strongly encourage participants to attend in pairs or teams so that they can observe in each other's classroom and provide helpful feedback, as part of the Teachers Learning Together (TLT) initiative already underway in many middle and high schools.

Key Strategies for Mathematics Interventions

The basic session, **Key Strategies for Mathematics Interventions**, will be offered again in the fall. The key strategies are research-based and recommended by the Institute for Education Sciences (IES) of the National Center for Education Evaluation and Regional Assistance, U.S. Department of Education, and the What Works Clearinghouse, in their document *Assisting Students Struggling with Mathematics: Response to Intervention (RtI) for Elementary and Middle Schools*.

December 4, 2013 8:30-3:00

Key recommendations include:

- Instruction during the intervention should be explicit and systematic. This includes providing models of proficient problem solving, verbalization of thought processes by both teacher and students, guided practice, corrective feedback, and frequent cumulative review.
- Interventions should include instruction on solving word problems that is based on common underlying structures (the CGI approach built into the Common Core).
- Intervention materials should include opportunities for students to work with visual representations of mathematical ideas.
- Interventions at all grade levels should devote about 10 minutes in each session to building fluent retrieval of basic arithmetic facts.

Additional sessions:

Key strategies for Mathematics Interventions – Computation (grades 2-5)

November 12, 2013 8:30-3:00

The focus of this one-day workshop is on moving students through the developmental stages of 1) counting procedures, 2) strategies for deriving facts, 3) fluent retrieval. Practice of strategies is critical for moving to fluency. Resources and games will be provided to assist with practice. A firm grounding in problem solving – to understand the concepts of addition/subtraction and multiplication/division – is an essential part of developing fluency.

Key strategies for Mathematics Interventions – Fractions (grades 3-6)

January 15, 2014 8:30-3:00

The focus of this one-day workshop is on developing conceptual understanding of fraction equivalence, comparison, and operations within the contexts of solving problems. Visual models and conceptual understanding will be emphasized. Online games and other resources will be provided.