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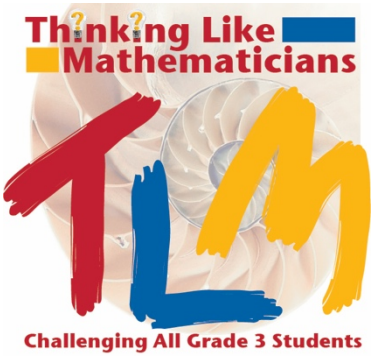

Thinking Like Mathematicians: Challenging All Grade 3 Students

Funded by the Jacob K. Javits Gifted and Talented Students Education Program, United States Department of Education PR/Award # S206A170023

Administrator Recruitment Invitation

Principal Investigator: E. Jean Gubbins, Ph.D.
Co-Principal Investigators: Aarti Bellara, Ph.D., Tutita Casa, Ph.D., and Bianca Montrosse-Moorhead, Ph.D.
Title of Study: Thinking Like Mathematicians: Challenging All Grade 3 Students
Protocol #: H17-293

We would like to invite your district to participate in a math unit field test designed for grade 3 students in general education classrooms. This research study has two main purposes. First, it is being implemented to evaluate math achievement outcomes for students involved in lessons focusing on algebraic thinking, multiplication, and division. The math achievement outcomes of students involved in the study's math unit will be compared to students who continue with the district's math curriculum.

Second, teachers' beliefs about their math teaching self-efficacy, and the recognition of potential talents in academically, culturally, linguistically, and economically diverse communities will be evaluated.

Requirements for Participation in the Grade 3 Math Unit Field Test:

- CT School: Agree that a minimum of two, grade 3 teachers in a school will participate in the math unit field test.
- Out-of-state School: Agree that a minimum of two, grade 3 teachers in a school will participate in the math unit field test. In addition, there needs to be a minimum of 10 grade 3, teachers across the district.
- Agree to the random assignment of grade 3 intact classrooms to implement the unit or continue with the district's math curricula.

Tasks for Control Teachers (Not Assigned to Implement the Study's Math Unit)

- Administer pre- and post-math unit test. *(Total time requirement is approximately 1 hour.)*
    - *For districts that do not currently use the Measures of Academic Progress, the math subtest will be administered (Total time requirement is approximately 2 hours).*
- Allow members of the UConn project team to observe your classroom one to two times. *(Total time requirement is 30 minutes to 1 hour.)*
- Complete three online pre- and post-surveys about teacher beliefs: math teaching self-efficacy (https://tinyurl.com/MathTeachingAnxiety), educational strategies and characteristics and behaviors related to twice-exceptional students (https://tinyurl.com/2eTeacherBeliefs), and students from academically, culturally, linguistically and economically diverse communities (https://tinyurl.com/TLMStudentDiversity). *(Total time requirement is approximately 30 minutes.)*
- *Total time requirement for tasks listed above is 2.5 hours (4.5 hours for districts that do not currently administer the Measures of Academic Progress).*

Tasks for Experimental Teachers (Assigned to Implement the Study's Math Unit)

- Implement the study's math unit consisting of 16 replacement lessons during your typical math period. *(No additional time required.)*
- Participate in 2 days of professional development. The research study will cover the costs of substitutes.
- Complete a teacher log (https://tinyurl.com/TLMTeacherLog) after the unit is implemented. *(Total time requirement is approximately 15 minutes.)*
- Participate in an interview after the unit implementation is completed. *(Total time requirement is 30 minutes.)*
- Administer pre- and post-math achievement assessments. *(Total time requirement is approximately 1 hour.)*
    - *For districts that do not currently use the Measures of Academic Progress, the math subtest will be administered (Total time requirement is approximately 2 hours).*
- Allow members of the UConn project team to observe your classroom one to two times. *(Total time requirement is 30 minutes to 1 hour.)*
- Complete three online pre- and post-surveys about teacher beliefs: math teaching self-efficacy (https://tinyurl.com/MathTeachingAnxiety), educational strategies and characteristics and behaviors related to twice-exceptional students (https://tinyurl.com/2eTeacherBeliefs), and students from academically, culturally, linguistically and economically diverse communities (https://tinyurl.com/TLMStudentDiversity). *(Total time requirement is approximately 30 minutes.)*
- *Total time requirement:*
    - *2 days for professional development*
    - *3.25 hours for the study's additional tasks (5.25 hours for districts that do not currently administer the Measures of Academic Progress).*

UConn IRB PROTOCOL H17-293 APPROVED 1/16/19

Tasks for School-level Administrator and Gifted Program Coordinator

- Participate in an interview after the unit implementation is completed. *(Total time requirement is 30 minutes.)*

Benefits to Participating in the Math Unit Field Test:

- There are no costs to participate in this research study. Teachers assigned to implement the math unit will receive all the curricular materials and 2 days of professional development. The research study will cover the costs of substitutes.
- Teachers will receive students' results on criterion-referenced and norm-referenced tests.
- Teachers involved in implementing the math unit will learn how grade 3 math standards, mathematical practices, and 21st Century Skills known as the 4Cs (Communication, Collaboration, Critical Thinking, Creativity) are integrated into the 16, 1 hour math lessons.
- Teachers who participate in this study will be financially compensated. Teachers who implement the study's math unit and complete the study will receive a $550 stipend for their participation. Teachers who implement the district's math curriculum and complete the study will receive a $250 stipend for their participation. Participants may exit this study without penalties and consequences other than forfeiting the stipend.
- Teachers will learn how to ensure that gifted and talented screening and identification procedures are research-based, defensible, and sensitive to students from culturally, linguistically, economically, and academically diverse schools and communities.
- Teachers who continue to implement the district's math curriculum will have access to the math unit when the study is completed in 2020. Your commitment to this project is one year.
- All study teachers will be contacted in 2020 to see if they are interested participating in 3 days of professional development focusing on designing enriched and accelerated math lessons that address students' learning needs in academically diverse classrooms.

We believe that our math unit, which was based on two of our former units that received curriculum awards from our National Association for Gifted Children, will benefit your students. In addition, the lesson plan format and the focus on tiered lessons will serve as models for addressing the needs of students in academically diverse classrooms. We look forward to talking with you about our math unit field test.