Early-Phase Competition Absolute Priority 3 (STEM)
University of Oregon Foundation
S411C220100
Math Ready-Supporting Early Number Sense (M-SENS)

Applicant Name: University of Oregon Foundation
Project Title: Math Ready-Supporting Early Number Sense (M-SENS)
Type of Grant Requested: □ Early-Phase
Absolute Priorities the Project Addresses: (select all that apply)
□ Absolute Priority 1—Demonstrate a Rationale (Early), Moderate (Mid), Strong (Expansion)
□ Absolute Priority 3-- Field-Initiated Innovations—Promoting (STEM) Education Competitive Preference Priorities the Project Addresses: (select all that apply)
□ Competitive Preference Priority 1—Promoting Equity in Student Access to Educational Resources and Opportunities
Total number of students to be served by the project: 1,890
Grade level(s) to be served by the project: Kindergarten
Your definition of high-need students: Students attending kindergarten in districts where fewer than 30% of students meet proficiency on the state mathematics assessment.
Brief description of proposed project, including project activities: In this project we will develop, implement, and test an innovative, integrated program to improve student mathematics achievement while developing student behaviors that support success and accessing academic content. We will design our program, Math Ready-Supporting Early Number Sense (M-SENS), to include effective classroom positive behavior management strategies linked to an existing evidence-based, kindergarten mathematics program (ROOTS). Working with participating kindergarten teachers, we will use an iterative design science approach to develop and test the feasibility of the program. After revising MSENS based on teacher input and lessons learned from initial implementation, our project will conclude with a pilot study in 60 kindergarten classrooms designed to test the promise of the program to improve student math and behavior outcomes, and teacher capacity to support early mathematics and behavioral needs of students.
Summary of project objectives and expected outcomes: M-SENS will be designed to result in three key outcomes: (a) accelerated student mathematics achievement, (b) reduced challenging student behaviors in whole-class settings, and (c) increased capacity of teachers to support student early mathematics and behavioral needs. We will achieve these outcomes through three primary project goals: (1) develop and refine the M-SENS program, (2) test the feasibility of M-SENS in authentic school settings, and (c) pilot M-SENS to test its' promise to improve student outcomes.
Describe how the proposed project is innovative: The proposed project builds on an existing evidence-based math intervention (ROOTS) in two innovative ways. First, we will adapt ROOTS to be delivered in a whole-class format to better support the early mathematics needs of students in schools where a majority of students are at risk for not meeting learning targets in mathematics. Second, we will integrate a positive behavior support component to comprehensively address student behavioral needs along with their early mathematics achievement. These innovative modifications will result in a program that will better support teachers and schools who are currently faced with escalating student needs in the general education setting.

Identify other studies and/practice related to the proposed project: The proposed project builds on our previous work developing and testing the efficacy of ROOTS, a kindergarten whole number mathematics intervention (e.g., Clarke et al., 2016) as well as existing practices related to classroom positive behavior supports and the Good Behavior Game.
Proposed implementation sites: Oregon City School District and Springfield Public Schools List all organizations partnering with this project: University of Oregon, The University of Texas at Austin, RAND Corporation, Springfield Public Schools, Oregon City School District