



Lincoln Public Schools

Mary L. Sterling, Ph.D.
Assistant Superintendent of Schools

To: Becky McFall, Superintendent
From: Mary Sterling
Re: Proposed curriculum materials for mathematics at the kindergarten level
Date: May 30, 2013

This memo seeks to summarize increasing concerns about the mathematics curriculum for kindergarten which have been discussed this winter and spring among math specialists, teachers and principals. These concerns have led me to make a recommendation for new mathematics curriculum materials to be ready for use by kindergarten teachers in September, 2013.

Ever since 2008 when we adopted *Everyday Math* as the K-5 math curriculum, we have been reasonably satisfied with the content, program materials and teacher guides at grades 1-5. However, we have been dissatisfied with the content, teacher guides and materials at the kindergarten level. We have had to spend time and resources over many years to adjust the kindergarten math expectations and augment the program to provide more substance. Now, the new Massachusetts mathematics framework at the kindergarten level has changed the expectations fairly significantly. Both the *Everyday Math* kindergarten program and our own enhanced materials are not sufficient nor are they aligned to provide our young students with the guidance and learning tasks they need to meet the new Common Core State Standards, embedded in the Massachusetts framework. We have discussed this dilemma with math specialists, principals and kindergarten teachers. Math specialists have researched other curriculum programs in an attempt to find materials that are more suitable. Throughout, we have asked the question: how can we provide our kindergarten students with high quality instruction and materials, aligned to the new standards, and well matched to the range of learners we teach at this grade level?

The new mathematics standards call for greater focus, coherence, and rigor at all grade levels. The focus areas for kindergarten lay the foundation for all topics in the subsequent grades: counting and cardinality, operations and algebraic thinking, number and operations in base ten, measurement and data, and geometry. For each topic, there are essential lessons for kindergarteners to develop their understanding and skill in working with numbers. The Standards for Mathematical Practices, which are woven throughout the new curriculum, begin in kindergarten and guide young students to make sense of math and see themselves as math thinkers.

Our current purchased program and teacher-developed materials address some of these topics yet they do not provide the coherence and depth expected in the new standards. They also do not incorporate the Standards for Mathematical Practices that build math thinking. This problem presents a choice: continue trying to adjust the current program materials with additional teacher-devised learning tasks and the purchase of supplementary materials or find a full set of curriculum materials that offer a stronger foundation for teachers of kindergarten and their students to teach and learn mathematics.

Given our experience with trying to adapt our current kindergarten math program over the past few years, we do not think that continuing to have teachers and math specialists make adaptations is a sound approach to building the kind of program we want for our kindergarten students. Also, the significant changes in grade level expectations would entail a substantial amount of new creation of curriculum and teacher guides, requiring more time and expertise than we can make possible over the summer.

Our math specialists have researched alternative materials and programs. They have found that no set of curriculum materials or program is fully aligned to new standards because they are all published before the 2011 publication date of the Massachusetts Mathematics Curriculum Framework. However, one program -- and its materials and teacher guides -- is superior to what we have now and offers much

greater alignment to the new standards. The kindergarten version of *Investigations in Number, Data and Space, 2nd Edition* emphasizes the kind of mathematical tasks and thinking that are characterized by the Standards of Mathematical Practices. Many unit topics align well with the topics in the new standards and provide a solid foundation for the concepts and skills expected in kindergarten. The teacher guides offer strong rationale and differentiated approaches to each topic, with consideration for the full range of learners.

We have explored the intersection of the *Investigations* kindergarten topics with the grade one expectations in *Everyday Math* and it appears that there is good continuity, particularly because we have adjusted the grade one lessons to align with new standards. Also, we are confident that this will actually provide a stronger transition into grade one because students are likely to be more skilled in the use of number and will have developed habits of mathematical thinking to serve them well.

Our math specialists who work with kindergarten teachers on both campuses and the current kindergarten team leaders believe that they can support teachers next year to use new lesson guides and new materials effectively for more powerful student learning. They have suggested a professional development plan that could integrate with our district priorities next year.

I hope you will concur with our concerns and the solution we propose. If funding can be made available, we would like to undertake the purchase of teachers guides and student materials for every kindergarten classroom with the understanding that teachers will work regularly with math specialists to use these with fidelity in the coming year.