



**Tri-State
Consortium**

WOODBRIIDGE SCHOOL DISTRICT

TRI-STATE Visit 2015

Math PreK-6 | May 27-29, 2015

Executive Summary



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Pat Cooney – Co-leader

Lead Teacher, Supervisor, Math K-5
Ridgefield
Ridgefield Public Schools
70 Prospect St., Ridgefield, CT 06877
203-431-2800
pcooney@ridgefield.org

Mary Ellis – Co-leader

Director of Curriculum & Instructional Services
Mt. Pleasant
Mount Pleasant Central School District
825 West Lake Drive, Thornwood, NY 10594
914-769-5500
mellis@mtplcsd.org

Sheila Ahern

Teacher
Ardsley
Concord Road Elementary School
2 Concord Rd., Ardsley, NY 10501
914-231-0945
sahern@ardsleyschools.org

Natasha Nelson

Teacher
Ardsley
Concord Road Elementary School
2 Concord Rd., Ardsley, NY 10501
914-231-0957
nnelson@ardsleyschools.org

Tara Peterson

Teacher
Ardsley
Concord Road Elementary School
2 Concord Rd., Ardsley, NY 10501
914-693-7510
petersot@ardsleyschools.org

Christina DeRosa

Teacher
Hauppauge
Forest Brook Elementary School
299 Lilac Lane, P.O. Box 6006, Hauppauge, NY
11788
631-265-3265
derosac@hauppauge.k12.ny.us

Eileen Gatto

Teacher
Hauppauge
Forest Brook Elementary School
Lilac Lane, P.O. Box 6006, Smithtown, NY 11787
631-265-3265
gattoe@hauppauge.k12.ny.us

Anna Nazaruk

Teacher
Mt. Pleasant
Hawthorne Elementary School
225 Memorial Drive, Hawthorne, NY 10532
914-769-8536 x6583
anazaruk@mtplcsd.org

Joan Mast

Asst. Supt., Curriculum and Instruction
Scotch Plains-Fanwood
Scotch Plains-Fanwood Public Schools
Evergreen Avenue and Cedar Street
Scotch Plains, NJ 07076-2595
908-232-6161
jmast@spfk12.org

Kate Rosander

Supervisor of Elementary Programs
Scotch Plains-Fanwood
Scotch Plains-Fanwood Public Schools
Evergreen Avenue and Cedar Street
Scotch Plains, NJ 07076-2595
908-889-8600
krosander@spfk12.org

Mary Santilli

Mathematics Program Leader
Trumbull
Trumbull Public Schools
6254 Main St, Trumbull, CT 06611
203-452-4301
santillm@trumbullps.org

TRI-STATE LIAISONS:**Kathleen Reilly**

Director of Training
Tri-State Consortium
203-762-2004
kathleenreillyct@gmail.com

Martin G. Brooks

Executive Director
Tri-State Consortium
631-478-9954
mgbrooks@optonline.net

Executive Summary

“To work together to prepare our children to pursue knowledge and learning throughout their lives so they can become responsible, caring and contributing members of an ever changing and diverse global community. In the best interests of our children, we are committed to:

- *Learning as a challenging process of choice, discovery, change and growth for all*
- *Inspiring the development and sharing of everyone’s unique gifts and talents*
- *Providing a learning community that integrates social, emotional, physical and academic development. “ Beecher Road School Mission*

The Woodbridge Public School district invited a Tri-State Consortium visiting team to study its approach to the teaching of mathematics, PK-6, May 27-29, 2015. The Tri-State visiting team consisted of mathematics teachers, instructional leaders, and administrators from our member districts. As the Tri-State Consortium enters its third decade, our core beliefs remain focused on authentic and interdisciplinary teaching and learning and purposeful assessment practices that are directly linked to optimal student performance. The Consortium describes its mission as...” *a dynamic learning organization of public school districts that values systems thinking as the foundation for continuous improvement. The Consortium assists its member districts in using quantitative and qualitative data to enhance student performance and to build a rigorous framework for planning, assessment and systemic change. Collaborating as colleagues and critical friends, Consortium members apply the standards of the Tri-State model to benchmark member districts’ progress in advancing teaching and learning.”*

The philosophical underpinnings of the Consortium are rooted in a commitment to the power of teaching and learning in a school system where grade levels support student learning through agreed upon and understood scaffolded curricula. The Tri-State assessment model is composed of eight indicators that are divided among student performance, internal support and external support; the visiting team of professionals collaborate to review the district’s points of inquiry and to arrive at a series of

commendations and recommendations that are specific to Beecher Road School and designed to assist the staff as it moves forward.

Beecher Road School is a warm, student-centered environment situated on forty-three acres of a natural habitat that extends the classrooms with playgrounds, gardens, student sculptures, and areas designed for small group reflection. Each morning of our visit, Tri-State visiting team members were greeted by eager Beecher Road student ambassadors who escorted us to the Rotunda, where we were based. The open and welcoming entrance into Beecher Road School and the early conversations with our proud student escorts set the tone for our visit. We immediately recognized the fine character of the student body and the professional atmosphere of the district. The Rotunda, an accommodating and attractive space, was decorated with original artifacts representative of student problem solving, innovative projects, original art, slide presentations, and student constructions (the “gallon man”) that surrounded us and informed our understanding of Beecher Road’s planned environment for students. There were also displays of the text series and workbooks aligned with math instructional practice.

Presenting a more formal welcome in the Rotunda, the Beecher Road leadership team comprised of Dr. Gaeton Stella, Superintendent of Schools, Ms. Sheila Haverkamp, Director of Special Services, Ms. Gina Prisco, Principal of Beecher Road School, Ms. Nancy White, Assistant Principal, and the Math Specialists, Jean Molot and Maureen Krawec described the “collective thought” that distinguished the preparations for the visit. To begin the work, Dr. Stella provided an overview of the district which included historical and demographic information, in addition to highlighting the many ways in which Woodbridge is a particularly unique school district. Walking through the hallways and ramps that frame the Rotunda, the “unique” description was evidenced by the student art work, arranged by grade and theme, and centered on student interpretation of nature, literature, portraits, and mathematics. Dr. Stella pointed out that it is the singular environment of Beecher Road School that is reflected in Albert Einstein’s

words: “Not everything that can be counted counts. Not everything that counts can be counted.”

Throughout our three days in the district, we observed teachers in conference with students, independent work directly supported by special educators, students in groups designing creative representations of math knowledge and a consistent sense of total involvement and rapport between student and teacher. The dedication of the staff, the close attention to the learning needs of all students in the current shifting demographics, and the research-based resource search led the leadership team to the selection of *Investigations* as the most appropriate Math program. *Investigations* was adopted and implemented in grades 3, 4 and 5 during the 2013- 2014 school year, and it was expanded to include grades 1 and 2 during the 2014-15 school year.

Clearly, the two Math Specialists, Jean Molot in PK-2, and Maureen Krawac in grades 3-6, have made considerable efforts to design and support the implementation of *Investigations*. Jean and Maureen are professionals who value teacher input at all stages of the implementation process. There are mnemonics (PQRST) for problem-solving, anchor lessons as exemplars, and pacing guides for every grade and unit that are all shared on the school’s Google Drive. The district’s commitment to these positions is evidence of a belief in the importance of continuity and consistency between the primary and intermediate grade levels as the staff moves through this process.

In addition, consultants were retained to work closely with teachers on each grade level. It is essential that the elements of the Common Core Standards are incorporated and understood in order to ensure teachers align content standards and the district’s internal standards with mathematical instructional practice. This professional learning was targeted at broadening teachers’ understanding of differentiating and personalizing instructional practice through the school wide focus on problem solving and building mathematical fluency.

Within Beecher Road School's Pre-K-6 population, the (MAG) Multi-Age Group program houses a cohort of students, grades 1-4. The Multi Age Group program reflects a constructivist approach to teaching and learning and is designed to provide attention to individual student needs. Parents of students who are enrolled in MAG described their strong support for and appreciation of the MAG philosophy. This program, and the Talented and Gifted (TAG) program, are examples of the district's desire to meet the needs of all students.

The Leadership Team developed a schedule for the visiting team that included interviews with all stakeholders --- students, parents, staff, BOE --- and all were eager to share their perspectives regarding the district's progress in math instruction. As an example, most teachers participated in the interview process, demonstrating an admirable sense of collegiality and collaboration at each grade level as well as a commitment to continuous improvement in student performance at Beecher Road School. One of the highlights of our visit was the generosity of the staff who invited us into their classrooms to experience the active learning environments and to shadow students as they engaged in learning mathematics through student-created math games and collaboration in problem-solving.

During the year preceding our visit, the district's Leadership Committee planned the focus for the visiting team by creating Essential Questions to guide our thinking. These questions outline the district's major concerns and inquiries about specific facets of the program. These questions also frame the Consultancy, a protocol that occurred on the second day and consisted of a conversation between the staff and the visiting team.

These essential questions also provided a lens through which the team viewed artifacts and evidence collected by Beecher Road staff. Additional evidence was collected by the Tri-State team through classroom visits and interviews. Beecher Road School cares deeply about all students, which is clearly articulated in their vision statement:

“Beecher Road must be a nurturing and stimulating community that values achievement, creativity, personal integrity and self-discipline. Here, each child

will develop intellectually, socially, emotionally, physically and ethically in an environment that promotes self-awareness and respect.”

Essential Questions

Essential Questions # 1: To what extent does our students' work in math:

- ***Reflect an alignment of curriculum with common core standards and mathematical practices?***
- ***Demonstrate a balance between procedural knowledge and opportunities for student engagement in real-world, authentic applications?***
- ***Inform us about what students know and are able to do?***

During the three day visit this question provided the framework to view the artifacts and ask targeted questions through the interview process. It was clear from the very first day that Woodbridge is committed to updating curriculum and increasing teacher capacity by incorporating understanding of the Common Core Content Standards and the Mathematical Practice Standards into ongoing professional development.

An outside consultant was hired to work throughout the year with all grade levels to unpack and deepen teacher understanding of both the content standards and practice standards. The visiting team found confirming evidence of the use of district-developed tasks in addition to those tasks selected from *Investigations, Big Ideas, and Exemplars* that are universally implemented as common assessments at each grade level. Coupled with the common assessments are common rubrics written in student-friendly language. It is through the work of articulating and implementing new curriculum that many teachers are collaborating and creating differentiated lessons that are targeted at the connection between the math program and the implementation of the Common Core Standards. There is considerable evidence to support the focus on the content

standards. However, the team wondered if there was equal time given to the Mathematical Practice Standards. Although there is evidence of students using notebooks to communicate their thinking, and working in small groups discussing various strategies, aligning instruction to include the 8 Mathematical Practice Standards regularly would help teachers in differentiating lessons as they continue to move forward. We also think that it could be helpful for the staff to do a cross-walk between the Common Core State Standards and *Investigations*: is there strong alignment between the district's program and the standards it seeks to reach, and if not, what supplementation needs to occur? And, we wonder why *Investigations* has not been implemented in Kindergarten (or 6th grade). We know that the district articulated reasons for this - we suggest that these reasons be revisited and be either confirmed or refuted.

The district-generated benchmark assessments measure problem-solving, computational fluency and fact fluency. Results of these assessments are compiled by the Mathematics Specialists and are analyzed by teachers to support individual students. Emphasis is placed on conceptual understanding with the move to the more efficient procedural method as students become more proficient in their understanding. The district might consider additional professional development for all teachers since this shift in practice is difficult, particularly for teachers working with the upper-grade students. Generally, teachers are most comfortable teaching mathematics procedurally; however, while the implementation of *Investigations* is building conceptual knowledge, embedding coaching and peer observations into the district wide professional development work would help internalize these required shifts.

The visiting team was impressed with the district-wide emphasis on mathematical problem solving. It was noted that many of the performance-based tasks provide opportunity for students to address real-world, authentic applications with topics relevant to the age group. Some of the work included problems such as adjusting cookie recipes, determining the volume of school supplies and deciding the capacity of a school desk. The use of these kinds of authentic, challenging math problems would

continue to support the district's desire to meet the needs of all learners as well as providing challenge to the students who might be considered advanced in their learning.

The district has developed a set of common assessments that are given to students during each year. The visit team wondered if there are too many assessments for students, taking away from instructional time. We also understand that student results are tied to teacher evaluations, perhaps causing teachers to place undue emphasis on these assessments. We suggest that the district look at this issue.

We also think it would be helpful for the district to focus a bit more on data - not only the data generated by the Connecticut state examinations and the newly implemented SBAC, but data focused on questions generated by the teaching staff and administration: for example, what do the teachers care to know about their students' mathematical abilities and interests; and what happens to Beecher Road students when they move on to middle school and high school? Additionally, we think it would be productive for the entire staff to think about how the district will know that its approach to math is accomplishing the desired goals - what are the metrics that will inform the system about this?

One final point before moving on to the second Essential Question - leadership. There is no one person in the district specifically charged with oversight of the district's curriculum and instructional practices. This places a significant burden on the two Math Specialists, who have limited time to work with teachers on curriculum and/or coach math instruction in classrooms because they are assigned to work with students for much (most) of their day, and the assistant principal, who has done excellent work in supervising math (and preparing for the visit) but who has myriad other responsibilities that occupy her time. We suggest that the district think about ways to redeploy staff so that curriculum/instructional oversight is created, and time for direct math coaching in classrooms is as well.

Essential Questions # 2: To what extent do we recognize, nurture, and meet the diverse mathematical needs of all learners?

The Woodbridge District recognizes that students develop mathematical skills and understanding in different ways and at different rates and is committed to meeting these diverse needs. This recognition is evident in the use of differentiated grouping, choice and variety in demonstration of understanding, and in the provision of both intervention and enrichment experiences in addition to core classroom instruction.

Further, the District has committed resources in the form of two Math Specialists who provide intervention and enrichment services, in addition to providing support for teachers to differentiate instruction within the core program. By committing to constructivist, inquiry-based mathematics programs, including *Investigations* and *Big Ideas*, the District has provided teachers with a core program that supports a differentiated approach to instruction. To build on these opportunities for differentiation, it will be helpful to provide Professional Learning Community (PLC) time for teachers to work with math specialists and special education teachers to plan differentiated opportunities for all students with a particular emphasis on metacognition and rigor in higher order thinking skills. It is our recommendation that the Beecher Road faculty be consulted about the professional learning they would like to have in differentiation.

Along with a core program that promotes differentiation; flexible grouping provides support for meeting the needs of diverse learners. In some grade levels, teachers purposefully group students based on current need. In Grade 3, teachers regroup students during the intervention/enrichment period based on identified needs. In Grade 6, students are assigned to a section based on assessment results. In both cases, groups are fluid and are adjusted as students demonstrate changes in need throughout the year.

TAG, the Gifted and Talented program, provides an opportunity for those students to engage in additional instruction with content that is challenging. There has been a notable change in the approach to the TAG program in the decision to bring students together to share their interests, abilities, style and creativity. TAG students have the ability to choose projects in Math, Literacy and the Arts and explore their interests individually or in partnership with groups of the same or mixed ages and grade level. The TAG program has also expanded to a more interdisciplinary approach through the introduction of STEAM, projects that include parachute design, skyscrapers and related creative thinking and problem solving. It is suggested that the content of the TAG program be reviewed to determine the degree of depth and higher order thinking that are expected, particularly with opportunities to synthesize knowledge for presentation to an audience. In addition, it is recommended that the district establish clear, measurable criteria for identifying students to be serviced through Intervention and TAG programs. These criteria might include consideration of a non-standard problem to solve, an element which can have equal weight as any standardized measure currently in place.

While the TAG program serves a relatively small number of students, the district educates a number of high-fliers in math - students whose mathematical abilities and proclivities are noticeably advanced. Currently, there does not appear to be an organized approach to addressing the unique skills and interests of these students. We recommend that the district look at this issue.

In reviewing the performance-based tasks and common assessments, there is evidence of a strong commitment to assessing student understanding through problem-solving. Students are often encouraged to be creative in the manner in which they complete the tasks, providing opportunity for differentiation by interest and product. In order to meet the demands of the Common Core Learning Standards and Mathematical Practices, it is recommended that these projects, assessments, and the associated rubrics, be reviewed to ensure that student work is rigorous in addition to being “creative”. The visiting team suggests that the language of higher order thinking be included in the expectations for projects and assessments. Furthermore, it is the self-awareness and

self-assessment captured in metacognitive reflection that guides students to understand their learning processes and preferences.

The Woodbridge School District reflects a strong commitment to excellence, and the staff of dedicated professionals center their energies on creating quality instruction in mathematics, K-6. The goals of a clearly articulated curriculum, complete with benchmark assessments, assured experiences for students, and a system to measure and monitor student growth, is commendable. To build upon this solid foundation, the district will benefit from a close look at the rigor of the mathematics program and at increasing student reflection and metacognition. In addition, time and support need to be provided for teachers to engage in further curriculum and assessment revision and alignment. We sensed strong faculty support for examining the math program during our visit, and felt great momentum for the work that has already begun. We anticipate that the district will capitalize on that momentum and engage the faculty in significant work around curriculum and instructional practice.

Finally, we would like to thank the district for its attention to our creature comforts. The preparation for our visit resulted in a seamless schedule and a wide and varied range of experiences for the team. The hospitality was splendid; special thanks to Lola Johnson and Lynn Lucas who spoiled us! We were treated every day to a beautiful work environment, delicious food and a school community that was eager to provide whatever we needed. We sincerely appreciated all the kindnesses of the staff of Beecher Road School.