



**Department of
Education**
Carmen Fariña, Chancellor

Office of School Quality
Division of Teaching and Learning

Quality Review Report

2014-2015

The Math and Science Exploratory School

Middle School K447

**345 Dean Street
Brooklyn
NY 11217**

Principal: Arin Rusch

**Date of review: March 2, 2015
Lead Reviewer: Anita Skop**

The School Context

The Math and Science Exploratory School is a middle school with 518 students from grade 6 through grade 8. The school population comprises 19% Black, 17% Hispanic, 54% White, and 8% Asian students. The student body includes 1% English language learners and 14% special education students. Boys account for 54% of the students enrolled and girls account for 46%. The average attendance rate for the school year 2013-2014 was 96.0%.

School Quality Criteria

Instructional Core		
<i>To what extent does the school...</i>	Area of:	Rating:
1.1 Ensure engaging, rigorous, and coherent curricula in all subjects, accessible for a variety of learners and aligned to Common Core Learning Standards and/or content standards	Celebration	Well Developed
1.2 Develop teacher pedagogy from a coherent set of beliefs about how students learn best that is informed by the instructional shifts and Danielson Framework for Teaching, aligned to the curricula, engaging, and meets the needs of all learners so that all students produce meaningful work products	Additional Findings	Well Developed
2.2 Align assessments to curricula, use on-going assessment and grading practices, and analyze information on student learning outcomes to adjust instructional decisions at the team and classroom levels	Focus	Proficient
School Culture		
<i>To what extent does the school...</i>	Area of:	Rating:
3.4 Establish a culture for learning that communicates high expectations to staff, students, and families, and provide supports to achieve those expectations	Additional Findings	Well Developed
Systems for Improvement		
<i>To what extent does the school...</i>	Area of:	Rating:
4.2 Engage in structured professional collaborations on teams using an inquiry approach that promotes shared leadership and focuses on improved student learning	Additional Findings	Well Developed

Area of Celebration

Quality Indicator:	1.1 Curriculum	Rating:	Well Developed
---------------------------	-----------------------	----------------	-----------------------

Findings

Rigorous habits and higher-order skills are emphasized in curricula and academic tasks and are embedded in a coherent way across grades and subjects. Planning and refining is done using student work and data.

Impact

Higher-order skills in the curricula ensure that all learners, including English Language Learners and students with disabilities, must demonstrate their thinking and that individual and groups of students, including the lowest- and highest-achieving students, English Language Learners, and students with disabilities, have access to the curricula and tasks and are cognitively engaged.

Supporting Evidence

- Teachers began Common Core-aligned curriculum maps three years ago using Atlas Rubicon, and they have since deepened the work. The maps have entry points for all learners. Further, analysis is a focus across content areas, and the expansion of analysis in fiction has resulted in intensive discussion among students. The math map is based on Connected Math Projects 3 and is inquiry-driven. Rubrics are used across content and in most classes. Thinking skills are promoted by “jigsaw group work” and gallery walks.
- Though this is a high-performing school, it has many students with real needs and the curriculum provides proper scaffolds such as jigsaw group work and gallery walks so that all students can engage with the same rigorous task. There are supports both for struggling learners and students exceeding standards. The extension work supports higher-functioning students with language development and deeper level of connections.
- Writing in all content-areas is rubric-driven and there are checks for understanding allowing teachers to review student work during group work. There was peer feedback and metacognitive planning during the grade 8 book club assessments. Students recorded their book club conversations for reflection. The rubrics support students in planning their writing, and self-assessing during and after writing.

Area of Focus

Quality Indicator:	2.2 Assessment	Rating:	Proficient
---------------------------	-----------------------	----------------	-------------------

Findings

Across classrooms, teachers use or create assessments, rubrics, and grading policies that are aligned with the school's curricula, and common assessments are used to determine student progress toward goals across grades and subject areas.

Impact

Assessment data provides actionable feedback to students and teachers regarding student achievement, and the results are used to adjust curricula and instruction. However, deepening the use of the data through more granular prescriptive strategies is the continuing focus at the school.

Supporting Evidence

- Teachers developed in-book assessments administered twice a year with Fountas and Pinnell as a secondary assessment for struggling learners who are behind in their book. Students read for two weeks then take a test on their book with specific look-fors. This has changed the face of conferencing as teachers now conduct formative reading assessments bi-monthly. Teachers want reading conferences to be driven by child-specific needs to give them a deeper understanding of how they are progressing as readers.
- Teachers created and administer pre- and post-assessments per unit so that they are targeted to students' learning needs. The pre- and post- assessments are skills-driven. This granular data allows teachers to drill down into the assessments and clarify instructional goals throughout the year. Teacher team meetings are focused on data analysis and this analysis is used to adjust the curriculum weekly as well midterm planning and yearly adjustment during June planning.
- Though teachers have a good collection of diagnostic tools, they are working to deepen the consistency of one-to-one academic support implemented as a result of the nuanced analysis of student data. For example, while students are grouped for instruction in all classrooms and teachers can identify their students in need, grouping by specific skill is still not as universally applied to support student progress.

Additional Findings

Quality Indicator:	1.2 Pedagogy	Rating:	Well Developed
---------------------------	---------------------	----------------	-----------------------

Findings

Across the vast majority of classrooms, teaching practices are aligned to the curricula and reflect a coherent set of beliefs about how students learn best that is informed by the Danielson Framework for Teaching and the instructional shifts, as well as by discussions at the team and school levels, leading to teaching strategies (including questioning, scaffolds in English, and routines) that strategically provide multiple entry points and high-quality supports and extensions into the curricula.

Impact

As a result of the coherent teaching strategies, all learners, including English Language Learners and students with disabilities, are engaged in appropriately challenging tasks and demonstrate higher-order thinking skills in student work products.

Supporting Evidence

- In two classes, a science class and math class, students worked in investigative groups to answer the guiding question with qualitative and quantitative evidence. In the science class, students tested minerals and engaged in discussions about the properties of the minerals before completing their graphic organizer. Teachers circulated the classroom to support students in classifying the minerals. Students in the math class worked in triads to create posters on how to find the surface area of a triangle using different strategies. Students tested out the strategies and then set up their posters in a gallery walk sharing out what they had seen.
- Students in a literacy classroom during independent reading were supported according to their needs. A student used a weighted head rest as he read to limit external stimulation. A small group was pulled aside to support them in making connections to time and setting in a poem and a story. Other students read self-selected books at their seats.
- In the 7th grade social studies classes, students engaged in mock trials at court to study constitutional laws. Social studies teachers planned for students to run the lesson. Students explained or questioned or commented on the trial. After turn-and-talk students reported out and challenged one another with strong questioning. In another class, students used debate to discuss the New Deal, with students moderating the debate based on teacher's guided notes on specific requirements.

Quality Indicator:	3.4 High Expectations	Rating:	Well Developed
---------------------------	------------------------------	----------------	-----------------------

Findings

School leaders consistently communicate high expectations (professionalism, instruction, communication, and other elements of the Danielson Framework for Teaching) to the entire staff, and provide training, and teacher teams and staff establish a culture for learning that systematically communicates a unified set of high expectations for all students.

Impact

There is a strong culture of mutual accountability for high expectations and as a result all students are provided clear, focused, and effective feedback and guidance/advisement supports to ensure that students, including high-need subgroups, own their educational experience and are prepared for the next level.

Supporting Evidence

- Students voiced deep understanding of rigor when they said they are “thinking harder and thinking deeper” because teachers “do more to allow kids to come up with things on their own.” Students spoke of the “greater use of rubrics” for projects, book clubs, group work is expected across all content areas. Discussions are run by students in their groups with teachers holding students to high expectations by giving them choice and responsibilities in engaging in discussions. Teachers provide students with narrative feedback progress reports twice a year several weeks before report cards are sent out.
- Teacher-led professional development study groups have engaged in learning about restorative justice circles, expanding literacy in content areas, collaborative inquiry and classroom management leading to higher levels of student engagement and teacher understanding of how their students learn.
- There is deep student-parent support beginning in grade 7 for high school readiness with practical support for parents, interview support for students, academic organization and study skills in advisory. Students engage in real-world studies and their grade 8 exit project is a performance based assessment task. In addition, students have the option to take up to three Regents by the end of grade 8.

Quality Indicator:	4.2 Teacher teams and leadership development	Rating:	Well Developed
---------------------------	---	----------------	-----------------------

Findings

Teacher teams systematically analyze key elements of teacher work including classroom practice, assessment data, and student work, and distributed leadership structures are embedded so that there is effective teacher leadership.

Impact

The focused data analysis has resulted in shared improvements in teacher practice and mastery of goals for groups of students, and teachers play an integral role in key decisions that affect student learning across the school.

Supporting Evidence

- There are teacher leaders in each grade as well as teaching coaches. Advisory lessons in grade 7 are designed and implemented by teachers with praise from administration. Grade-level teacher teams meet weekly to review case conferences of students, and the department grade-level reviews student work. Teachers are trained on strategies to push students beyond good enough such as supporting interactions with other students, using relevant student-friendly analogies, organization skills, transition supports and focusing on student strengths.
- Teacher team agendas are simple but strong, zooming in on student misconceptions and evaluating strategies to address student needs such as stations, creating challenging student extensions, referencing pre-assessment data, guided notes, modified worksheets, lunch time support, student study groups and graphic organizers. One agenda, guiding the teacher team meeting, bulleted items of looking at student work and school goals.
- Teachers believe that teams are crucial to meeting school goals, and collaboration is universal throughout the school. A 7th grade ELA teacher who led a discussion on the student discussion around To Kill a Mockingbird, said that the team saw an increase in student discussion in their respective classes. Coaches and administrators are present at many meetings. Coaches meet once a week to ensure coaching goals and school goals are aligned. Observation feedback instills accountability and clarifies use of data to improve student learning.