

# Quality Review Report 2013-2014

**Manhattan Center for Science and Mathematics**

**04M435**

**260 Pleasant Avenue  
Manhattan  
NY 10029**

**Principal: David Jimenez**

**Dates of review: May 5-7, 2014  
Lead Reviewer: Musa Ali Shama**

## Part 1: The school context

### Information about the school

Manhattan Center for Science and Mathematics is a high school with 1,579 students from 9 through grade 12. The school population comprises 20% Black, 57% Hispanic, 3% White, and 19% Asian students. The student body includes 4% English language learners and 6% special education students. Boys account for 51% of the students enrolled and girls account for 49%. The average attendance rate for the school year 2012 - 2013 was 92.4%.

### Overall Evaluation

**This school is well developed.**

## Part 2: Overview

### What the school does well

- Teaching strategies reflect a shared set of beliefs that leads to high levels of student engagement in tasks and class discussions resulting in meaningful student work products. (1.2)
  - The school's belief about how students learn best is clearly reflected in the instructional foci for the 2013-14 school year. The three areas of focus are: student to student discussions, literacy across disciplines, and providing students with multiple entry points to access curricula. School leaders and the instructional team focus on these areas by reviewing data from observations informed by the Danielson Framework for Teaching, and maximizing professional development, peer inter-visitation, and teacher teamwork to strengthen the implementation of these pedagogical strategies. Across the vast majority of classes, teachers were observed utilizing strategies that deepened student engagement and participation in rigorous tasks that demanded higher order thinking skills. For example, in a ninth grade English language arts class, students engaged in peer discussions regarding informational texts that they had annotated, and completed a graphic organizer collaboratively. In an Integrated Co-Teaching science class, students shared out the answers that they recorded in response to the “Do Now” activity, and were observed building on each other’s answers. In a bilingual math class, students worked collaboratively to solve probability equations, and a member of each student work group shared the group’s reasoning and solution at the board. In another science class, students assumed assigned roles in triads as they constructed voltaic cells, determined the voltage, and created diagrams and an explanation of the outcome of the experiment. Students expressed that they enjoyed working in groups and discussing assignments with their peers. They stated that they did this in the majority of their classes, and it made learning more exciting. The deep student engagement across the vast majority of classes results in meaningful student work products that demonstrate high-level thinking and participation in rigorous tasks.
- School leaders maximize resources, strategically assign teachers, and develop individualized student programs in alignment with the school’s instructional goals, resulting in student academic progress. (1.3)
  - School leaders leverage key partnerships to provide students in the science research program with access to college faculty advisors and facilities that support student engagement in high-level science research. For example, students participate in research projects at the Cold Spring Harbor Laboratory in the Urban Bar Code program, while other students receive support from City College of New York and Hunter College advisors in conducting research in inorganic chemistry, neurology, and oncology. Students then present research projects at events such as Intel’s International Science and Engineering Fair, and the New York City Science and Engineering Fair. As a result of the strategic professional collaborations that have been developed, the school has been recognized nationally for the work students have produced in the Science Research program, resulting in numerous awards and student scholarships. In addition, the school has partnered with Generation Ready in providing professional development support for teachers

to ensure curricula alignment with Common Core Learning Standards (CCLS). With the support from Generation Ready consultants, co-teachers utilize data generated from student online sessions to refine lessons and differentiate supports for students. For example, ninth grade English language arts teachers meet regularly to refine curricula based on student work and data analysis and provide targeted support, such as an intensive reading and writing program that takes place prior to the start of the school year, where students are then transitioned into a double period literacy block with small class sizes of 16 students per class. In addition, students in Integrated Co-Teaching algebra classes are provided with a double period math class with one period devoted to classroom instruction and the second period providing opportunities for students to work in a computer lab utilizing Revolution K-12 software. The instructional team has also implemented a summer bridge program to support targeted students in developing the requisite skills to produce college level work. By developing effective university partnerships, providing teachers with resources and professional development support, and strategically grouping students to provide targeted interventions, school leaders and teachers ensure that all students are prepared to engage in rigorous coursework, as evidenced across classrooms visited by meaningful student work products that demonstrate a high level of thinking and student ownership.

- The school has established a highly personalized, supportive and mutually respectful learning environment that strategically incorporates family outreach, leading to students' personal and academic growth. (1.4)
  - The student-centered, college bound culture is the driving force behind a safe and supportive school environment that nurtures the whole child. Guidance counselors collaboratively developed a college readiness curriculum as a four year roadmap that is introduced in the ninth grade when students begin preparation for the college application process. Counselors engage students in completing interest inventory assessments, and meet with them individually to review college aspirations and transcripts, and expose them to opportunities available through various community-based organization and university partnerships. Counselors track interactions with students to ensure that they are conferencing with each student in their caseload. In ongoing meetings, counselors encourage student participation in advanced placement (AP) classes, summer internships, extra-curricular activities, service learning, and clubs. Students in need of additional interventions are identified and referred to in-house support services such as The Mount Sinai Health Center and Harlem Center for Education. Students shared that they are encouraged by teachers and guidance counselors to become active members of their school community, to participate in extra-curricular activities, and to become well-rounded students who are prepared to excel the college application process. To facilitate family outreach the school has promoted the use of Skedula. Professional development has been provided to faculty in the use of Skedula to post grades, student anecdotes, and homework assignments, and workshops support parents in accessing this online system. Students stated that they find the access to their grades helpful as they self-assess their progress and plan for next learning steps, and Skedula reports indicate that 82% percent of students access the system regularly. Parents stated that, because teachers update grades regularly, they have access to live information regarding their child's progress, and they praised the school's guidance counselors for keeping them informed of the additional academic supports the school has made available for students. These extensive

structures that the school community has implemented to personalize supports for students and engage families as partners have resulted in a ninety percent graduation rate, and a four-year college acceptance rate of 75%.

- Assessment practices are strategically used to analyze and track student progress towards goals, provide feedback and clear next steps, and adjust instruction so that all students demonstrate mastery. (2.2)
  - Teachers across grades and subject areas develop rubrics that are aligned to curricula and Common Core Learning Standards, and utilize these common rubrics in tasks and projects to help guide specific feedback students that receive. Teachers review rubrics with students as tasks and projects are assigned to provide students with clear expectations regarding the criteria for the demonstration of mastery. For example, in a math class, students reviewed the task specific rubric prior to engaging in the task of applying formulas for prisms and cylinders to discover surface area. In a social studies class, students prepared to write a document-based question (DBQ) essay on “the achievements of the African empires and Kingdoms before European arrival” following a review of the Regents DBQ Essay Rubric prior to commencing work. Students articulated that they were provided with rubrics for all of their assignments, and that these rubrics and the targeted feedback that teachers provide has helped them understand what they have to do in order to build and demonstrate mastery. Across departments, teacher teams and their supervisors demonstrate the use of strategic data analysis to drive planning and adjustments of curricula. School leadership analyzes data to track student progress, and to increase teacher capacity to create the necessary interventions to support target populations. For example, the English department utilized the NYCDOE performance assessment results to set a short and long term plan of action to address student difficulties in identifying counterclaims within text and disputing counterclaims with evidence. Teacher teams used this data to develop a unit of study and to create scaffolds to improve student skills in this area of focus. In turn, teachers developed common performance assessments to measure progress and to further refine curriculum. The math department was observed using common assessments in algebra to engage in inquiry focused on students with disabilities who had difficulties with understanding operations with radicals. The use of a common grading policy and task-specific rubrics is consistent across classrooms, leading to a school-wide shared understanding of school and course expectations. This shared approach to the use of a common grading policy, task-specific rubrics, providing students with clear feedback, and focused data-analysis and adjustment of instruction has led to the increased mastery for all students across content areas.
- School leaders provide teachers with effective feedback that articulates clear expectations and next steps for professional growth, and with personalized professional development opportunities that lead to growth for all teachers. (4.1)
  - School leaders have strategically aligned the school’s instructional foci, teacher team inquiry work, and early rounds of observations to provide targeted feedback and next steps to teachers in the components of managing classroom procedures (2c), using questioning and discussion techniques (3b), and using assessment in instruction (3d). The effective implementation of the Danielson Framework has resulted in the development of a school-

wide system for providing all teachers with frequent actionable and timebound feedback as well as clear next steps for growth while monitoring progress towards professional goals. School leaders have identified areas of teacher expertise, and have created a “Bank of Instructional Strengths” to support teacher-led professional development, inter-visitation, and peer coaching opportunities that encourage teachers to model best practices for colleagues. The principal and assistant principals utilize the Advance Measures of Teaching Practice data to systematically analyze trends in school-wide growth across domains as well as progress towards goals that teachers have identified in their individual professional growth plans. Observation data trends are shared with faculty to provide an open dialogue regarding teacher development as well as provide teachers with input in their own professional development. Professional development reflection forms are completed by teachers after each professional learning opportunity providing school leaders with feedback on the differentiated supports that teachers need. Teachers stated that they felt supported by school leaders, and that feedback and next steps were timely and actionable, and the principal provided evidence that the effective supports and targeted professional development have resulted in a thirty percent increase in teachers moving from developing to effective in using questioning and discussion techniques, and in using assessment in instruction.

### **What the school needs to improve**

- Strengthen teacher skill in refining curricula to ensure coherence across classrooms so that all learners, including the lowest and highest achieving students, are cognitively engaged (1.1)
  - School leaders have led faculty through the process of analyzing standards and refining curricula to integrate the Common Core Learning Standards (CCLS), include essential questions, academic vocabulary, and common formative and summative assessments. Teacher teams refine units to focus on areas of student need identified through data analysis and through the process of looking at student work. Lesson plans identify supports for English language learners and students with disabilities. Each unit of study across all content areas includes modifications for English language learners, students for disabilities, and advanced students. However, the targeted area of skill development aligned to CCLS is not planned in a coherent manner across all disciplines. For example, in an English 1 unit with the essential question of “What is self-identify?” students were to explore and analyze the identity of characters in fictional text. Skills such as note-taking, using notes from non-fiction oral reading, and identifying the function of each paragraph were infused in the unit. However, these skills were not consistently integrated throughout disciplines such as in social studies and science, hampering efforts to enhance college and career readiness skills for all students in all classrooms.

## Part 3: School Quality Criteria 2013-2014

School name: Manhattan Center for Science and Mathematics	UD	D	P	WD			
Overall QR Score				X			
<b>Instructional Core</b>							
<i>To what extent does the school regularly...</i>	UD	D	P	WD			
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?			X				
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?				X			
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?				X			
<b>School Culture</b>							
<i>To what extent does the school ...</i>	UD	D	P	WD			
1.4 Maintain a culture of mutual trust and positive attitudes that supports the academic and personal growth of students and adults?				X			
3.4 Establish a culture for learning that communicates high expectations to staff, students and families, and provide supports to achieve those expectations?				X			
<b>Systems for Improvement</b>							
<i>To what extent does the school ...</i>	UD	D	P	WD			
1.3 Make strategic organizational decisions to support the school's instructional goals and meet student learning needs, as evidenced by meaningful student work products?				X			
3.1 Establish a coherent vision of school improvement that is reflected in a short list of focused, data-based goals that are tracked for progress and are understood and supported by the entire school community?				X			
4.1 Observe teachers using the Danielson Framework for Teaching along with the analysis of learning outcomes to elevate school-wide instructional practices and implement strategies that promote professional growth and reflection?				X			
4.2 Engage in structured professional collaborations on teams using an inquiry approach that promotes shared leadership and focuses on improved student learning?			X				
5.1 Evaluate the quality of school- level decisions, making adjustments as needed to increase the coherence of policies and practices across the school, with particular attention to the CCLS?			X				
<b>Quality Review Scoring Key</b>							
UD	Underdeveloped	D	Developing	P	Proficient	WD	Well Developed