



**Department of
Education**
Carmen Fariña, Chancellor

Office of School Quality
Division of Teaching and Learning

Quality Review Report

2014-2015

**Archimedes Academy for Math, Science and
Technology Applications**

08X367

**456 White Plains Road
Bronx
NY 10473**

Principal: Miriam Lazar

**Date of review: December 4, 2014
Lead Reviewer: Socorro Diaz**

The School Context

Archimedes Academy for Math, Science and Technology Applications is a Secondary School with 637 students from grade 6 through grade 12. The school population comprises 33% Black, 57% Hispanic, 2% White, and 6% Asian students. The student body includes 6% English language learners and 22% special education students. Boys account for 60% of the students enrolled and girls account for 40%. The average attendance rate for the school year 2013-2014 was 90%.

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	Additional Findings	Proficient
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	Proficient
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	Celebration	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	Proficient

Area of Celebration

Quality Indicator:

**3.4 High
Expectations**

Rating:

Well Developed

Findings

School leaders and staff in partnership with parents and families effectively communicate expectations in support to students' progress to ensure they are prepared for the next level. . These expectations are effectively communicated and support mutual accountability, instructional supports, and college and career readiness.

Impact

A culture of collaboration between staff, students and families exists that fosters high expectations for all with a clear path towards college and career readiness.

Supporting Evidence

- The school organizes students in Living Groups advisors to support their social and academic development. Advisors review transcripts and report cards providing feedback to students and organizing next steps. High school Living Groups consistently focus on helping students with college and career tasks and readiness. For example, Senior Groups work on the college essay process and Free Application for Federal Student Aid (FAFSA) application. In addition, staff in collaboration with a community based organization, South Bronx Overall Economic Development (SoBro), organizes and offers internships programs and real work opportunities to students.
- This year for the first time, the school has created a grade 7 honors class offering Living Environment, Common Core Algebra and US History Regents. For the high school students, the school has reversed the science sequence and students begin with Active Physics in grade 9, take Regents or Active Chemistry in grade 10 and take an enriched Biology course or a Syracuse University Placement Advance (SUPA) College Level Biology course in grade 11.
- The school's Transition Team headed by the IEP teacher has been trained in multiple pathways to graduation and it is now concentrating their efforts on supporting students in obtaining their Career Development Occupational Studies (CDOS) credentials. In partnership with South Bronx Overall Economic Development (SoBro), implementation plans are being developed for student internships outside of the school building.
- Ongoing feedback to families to understand their children's progress is consistently made via phone calls, letters, and the internet thru a track system named the Online Gradebook. During the parents meetings, parents shared that they are able to download an APP on their phones to receive messages about their children's homework, class participation, projects/instructional tasks and attendance. In regards to students, it was clear that they know what it expected of them as they shared their work during our meeting. Monthly meetings are scheduled with parents and the administrative team to discuss partnerships and opportunities where parents and families can make recommendations for their children's participation based on interest and abilities.

Area of Focus

Quality Indicator:

2.2 Assessment

Rating:

Proficient

Findings

While across classrooms teachers use or create assessments, rubrics, and grading policies that are aligned with the school's curricula and provide student feedback further development of assessments would offer students a clearer portrait of mastery.

Impact

The school's use of common assessments, data analysis and feedback allows teachers to make curricular and instructional adjustments to meet the needs of all students.

Supporting Evidence

- Teachers use MOSL pre- and post-assessment analysis, ELA and Mathematics New York State Exams data and RADI Reports (Regents Item Analysis) to inform their instruction. These assessments built in to the units of study and lesson plans designed in curriculum maps. This information is used throughout the year to determine student progress toward meeting their goals across grades and contents. For example, math and science teachers have administered pretests and students created individual SMART goals based on student outcomes.
- During classrooms visits we observed checks for understanding: in one class, the teacher asked to regroup to reinforce what was expected. In another class, the teacher promoted questioning and discussion at different levels: in an ICT class the teacher encouraged students to talk to their partners before answering the question; in a self-contained class the teacher asked questions about a posted math problem on area and perimeter. A student struggled with explaining the answer and the teacher asked him to point to another student for support. In a Global History class, questions were differentiated to meet the various academic levels in the class.
- The use of rubrics accompanied by actionable feedback from teachers and students was evident in the work displayed in hallways. During the leadership interview, the principal shared the professional development opportunities offered to teachers in regards to the use of rubrics and providing feedback to students. The school has a grading policy that detailed a standard based grading rubric for all assignments. Students' self-assessment was evident in student work displayed in hallways thru the use of rubrics and student reflection but displays of student work inside classrooms were limited. Hallway displays are accompanied by a bulletin board rubric with a set of indicators aligned with CCLS and/or content Level Standards.
- In reviewing lesson plans, it was noted that most plans showed areas for grouping and differentiated instruction. Small groups were designed based on assessment data and classroom observation.

Additional Findings

Quality Indicator:	1.1 Curriculum	Rating:	Proficient
---------------------------	-----------------------	----------------	-------------------

Findings

Curricula are aligned to Common Core Learning Standards (CCLS) and/or content standards and academic tasks are refined using student work, to provide access to curricula for all students.

Impact

The school's purposeful curriculum decisions build coherence, and data-driven task refinements promote engagement and college and career readiness for all learners.

Supporting Evidence

- Lesson plans from observed classrooms were cognitively engaging, requiring students to cite evidence, analyze information, cause and impact, develop claims and counter claims, and apply concepts to solve real-world problems. For example, a review of a lesson plan requires students to analyze information from a variety of sources and draw a conclusion based on their findings. In a United States History lesson plan, students were asked to work in pairs to analyze political cartoons and then create their own original political cartoon. In a third lesson plan, students were asked to explain in their own words, how do authors use imagery, figurative language, and other poetic devices to introduce, illustrate and elaborate on their ideas about democracy and its flows and limitations.
- School leaders, instructional teams and teachers explained how curricula and tasks are purposely planned are refined using student work collected from benchmark assessments and student class work. For example, a seventh grade team had just finished grading and norming the benchmark assessments recently administered to determine progress towards student goals established early in September connected to building strong long term academic skills which will make students successful in college and beyond.
- Student work and tasks displayed in hallways and summative writing assessments found in unit plans across subject areas were aligned to CCLS and content standards. In reviewing curriculum maps, it was noted that there was evidence of alignment to CCLS and they emphasized rigorous tasks as evident by the Grade 10 Curriculum Map for Global Studies and Grade 8 Curriculum Map for English Language Arts.

Findings

Across classrooms, teaching strategies were consistent in providing multiple entry points into the lesson and student discussion reflected even levels of student understanding.

Impact

All learners were actively engaged and there were multiple opportunities to promote higher order thinking skills.

Supporting Evidence

- During the leadership interview, the principal and assistant principals described that the school was focusing on increasing student engagement throughout the entire lesson. In addition, it was shared that the school is working with teachers in developing lessons and unit plans that include student choice of activity or projects that are at varied levels of difficulty and entry points resulting in the ability to earn higher grades depending on the quality of the completed task. In most classroom visited, students were engaged and involved in appropriate challenging tasks. In an ICT class, students were grouped by levels and instructional activities were differentiated. A group of students was working on identifying and explaining how phenomena (threats) affect biodiversity. Another group was working on synthesizing how threats were applicable to real life experiences. Another group made a Venn diagram to compare and contrast the threats.
- In classrooms visited, teachers asked questions to call for students to strategically think or extend their thinking. In a science ICT class, the teacher asked her small group to discuss how threats affect biodiversity of an ecosystem. In an ELA classroom, the teacher asked students to work with their table group and explain, in their own words, how authors use imagery, figurative language, and other poetic devices to introduce, illustrate and elaborate on their ideas about democracy and its flows and limitations. The group had to summarize their findings and shared with the rest of the class. In a grade 9 English class, the teacher asked students to engage in a turn and talk activity to share what they know about the Cupid myth after reading the first few chapters of *Romeo and Juliet*.
- Across classrooms, students worked collaboratively and were actively engaged in the discussions within their groups. Students were able to articulate the work of the group and have an understanding of the material being covered. In an English language arts class students were asked to determine a theme or central idea of a text and analyze its development over the course of the text and provide an objective summary of the text. Students were also able to explain their reasons and draw conclusions. In another class, students were answering text dependent questions. They were able to articulate the task's expectations.

Quality Indicator:	4.2 Teacher teams and leadership development	Rating:	Proficient
---------------------------	---	----------------	-------------------

Findings

The majority of teachers participate in teacher-led, structured professional collaborations, working together to analyze and improve classroom practice and to engage in ongoing questioning and decision.

Impact

The work of teacher teams has strengthened teacher collaboration resulting in improvements to pedagogical practices and improvement in student learning.

Supporting Evidence

- The principal ensures that teachers engage in ongoing professional collaborations in the implementation of Common Core Learning Standards and instructional shifts that are aligned to the school's instructional goals, promoting improved teacher practice and progress towards student goals as evident by school PD plan and teachers and students schedules. Regular meetings with principal and teachers are scheduled to discuss professional development opportunities connected to teacher practice and student achievement.
- Middle School Teams professional work time is on Tuesdays in the afternoon and professional development (PD) time is on Thursdays. High School Teams professional work time is on Wednesday morning and PD time is on Friday afternoon. Middle School Teams include Title III Team, PD Committee, Grade and Subject Teams. High School Teams include Youth Development Teams, Special Education Team, Student Activities and PD Committee. Inquiry and Transition Teams span across both Middle and High School. All teams are led by a teacher team leader. Teams meet weekly, monthly and/or biweekly to engage in inquiry-based work and to examine student work. Both the MS and HS teams attended network PD's on Election Day to analyze ways to insert questions stems from standardized tests into their regular instruction to help prepare students to achieve academic success.
- During a Transition Team meeting, it was observed how teachers discussed individual students' progress and carefully reviews Individual Education Plan (IEP) goals to ensure services are provided and academic goals are being met. A follow up conversation takes place with the student by his Living Group advisor who discusses the student IEP goals and next steps. Process is transparent and students are aware of their IEP goals
- Teachers articulated how they share best practices connected to targeted areas of focus identified by the examination of student data and how these collaborations meetings have helped to create a culture of inter-visitation among staff members that has led to more targeted feedback from peers about their practice. One Physical Education teacher shared how he is incorporating math and science skills in his lessons and students are producing written work aligned to the curriculum.