



ADOPTING NEW SCIENCE MATERIALS THAT BROKE DOWN INSTRUCTIONAL SILOS AND EMPOWERED TEACHERS



About Piscataway Township Schools



PreK-12 community school district in suburban New Jersey



7,128 students

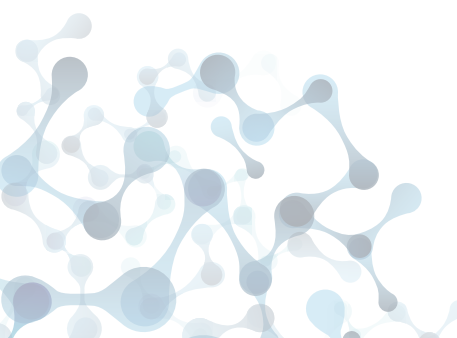


Mission:

Piscataway's Mission in Science

"Application of scientific knowledge is at the forefront of instruction in the Piscataway Science Department. Our vision in science education is by tapping into their natural curiosity, students will access learning through discovery and exploration. Our goal is for students to gain an understanding of scientific phenomena through their applications, as opposed to memorization of facts.

"To achieve this, students will collaborate in hands-on investigations with peers to ask questions, develop models, construct claims from evidence, and design solutions to problems. Our students will engage in unit and topic investigations that empower them to independently identify variables to explore. These investigations, and the subsequent constructed explanations, will allow teachers to monitor and guide student progress towards reaching grade level performance expectations."



The Challenge

At Piscataway Township Schools, administrators and teachers share a commitment to both delivering excellent instruction and providing students with hands-on, real-world application of experiences. However, after the adoption of the Next Generation Science Standards (NGSS) the team found that current textbooks and resources were only superficially aligned and enforced a prescriptive instructional style. So Dr. Jeffrey Celebre, Supervisor of K-8 Science & Engineering, began a strategic and focused search for high-quality and aligned resources.

"In most materials I reviewed, there was alignment but it ended there. A lot of that opportunity to synthesize or truly apply that information was not possible. The labs followed a set timeline and pacing, so they were very predictable lessons. They hindered discovery and did not emulate how science works in the real world."

Dr. Jeffrey Celebre, Supervisor of K-8 Science & Engineering

In his quest for new science materials, Dr. Celebre was committed to upholding Piscataway's long-standing culture of teacher empowerment: While administrators foster collaboration and curricular consistency across all three middle schools in the district, they also place a high value on classroom autonomy and flexibility.

At the same time, Dr. Celebre was mindful that his district was in a process of transition. For several years, Superintendent Dr. Frank Ranelli and his leadership team had been working to break down instructional siloes that kept science learning in the science classroom. To achieve this, Dr. Celebre knew teachers would need high-quality resources to support them as they incorporated and integrated subjects and methodologies.

After piloting Mosa Mack Science, Dr. Celebre found that it met their materials review criteria and would be a valuable addition to the district's curriculum.

The Solution

Mosa Mack Science offers high-quality curricular materials with NGSS standards embedded into every phase of every lesson. It uses real-world scientific phenomena to connect with students on a deeper level, promoting open-ended inquiry and active engagement.

As Dr. Celebre observed, "In our shift to a more phenomenon-focused teaching approach, Mosa Mack jumpstarts the process by beginning with a gripping investigation. It allows for questioning and gives students the opportunity to apply their knowledge more broadly. Utilizing the engineering component allowed us to tap into that end of NGSS curriculum more deeply than a textbook alone ever could."

ADOPTING NEW SCIENCE MATERIALS THAT BROKE DOWN INSTRUCTIONAL SILOS AND EMPOWERED TEACHERS

Piscataway administrators have been particularly excited that the materials are so customizable—they are flexible enough to use as a supplement but also comprehensive enough to adopt as a core. This allows individual teachers in each school to adopt and integrate them according to their own needs. It also dovetails with the school's culture of cross-classroom collaboration, allowing teachers to share and collaborate more easily with each other.

Mosa Mack materials have gone through a smooth implementation process—allowing Piscataway teachers and students to see and forge natural connections within science and across other disciplines. Teachers share that Mosa Mack meets them where they are, offering flexible, turnkey materials and content-embedded opportunities to grow as they teach.

The Outcome

Three years into Piscataway's incorporation of Mosa Mack Science materials, the leadership team observed several key, lasting changes:



Greater access for teachers to a wider range of real-world materials and sources



Increased collaborative use of resources among teachers and between classrooms



Deeper appreciation of science's role in real-world engineering projects



Greater teacher enthusiasm for creating and refining dynamic lesson plans



A widespread culture of investigative learning for students

"The way Mosa Mack models lesson planning, the way it places value on teacher autonomy and collaboration— these appeal to our department, and they are incredibly motivating," says Dr. Celebre.

Looking Forward

Bridging theory and practice, Mosa Mack Science fulfills Piscataway's mandate to honor NGSS standards within an integrated, interdisciplinary classroom structure. Open-ended inquiry, cross-disciplinary collaboration, and real-world investigation are now central to every element of the teaching and learning experience. Educators are energized by the change and find the materials fresh and engaging, while Piscataway students now carry their new skills beyond science class into other subjects.