CASE STUDY

HAYWARD UNIFIED SCHOOL DISTRICT
Hayward, California

NATIONAL MATH + SCIENCE INITIATIVE

CALIFORNIA SCHOOL DISTRICT RETHINKS STEM EDUCATION TO SET EVERY STUDENT UP FOR SUCCESS

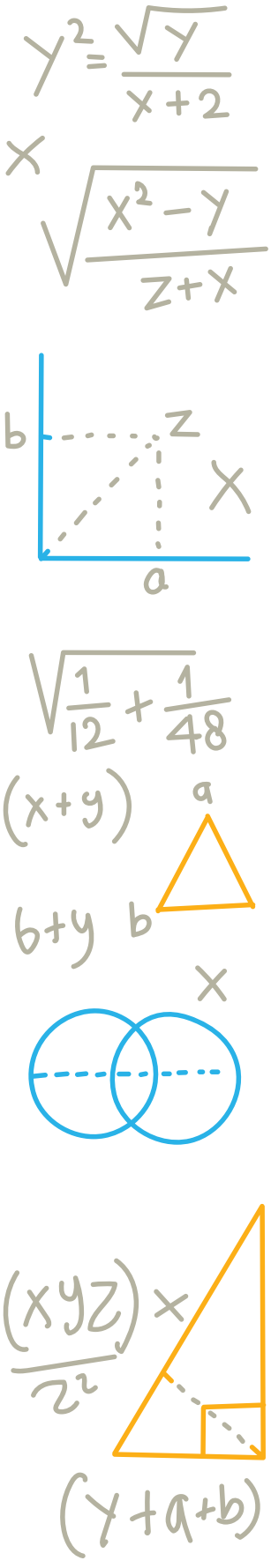
Photo Credit: Hayward Unified School District

Hayward Unified School District, located in Hayward, California, serves more than 19,000 pre-K-12 students who come from a variety of diverse cultures, heritages, languages, and economic conditions. The district is comprised of 21 elementary schools, five middle schools, three high schools, one alternative high school, one adult education center, and the Helen Turner Children's Center for preschool children.

HUSD serves a diverse, vibrant community in the heart of the East Bay and provides a safe learning environment for students to attain high academic achievements. One of the district's goals is to prepare students for college, a career, and life through meaningful education.

In 2018, HUSD leaders partnered with the National Math and Science Initiative to increase access to high-quality STEM education in the district.

Unlike other STEM initiatives or training opportunities that focus on one specific subject matter, NMSI's Laying the Foundation program helps teachers build and maintain subject matter expertise, enhance their leadership of diverse classrooms, and prepare students to be confident, creative problem solvers. First working with the district's three high schools, HUSD partnership with NMSI evolved into a full-district model.



CREATING A STRONG FOUNDATION FOR SUCCESS

"I hadn't had the opportunity to attend a training that directly impacted my teaching in several years. [NMSI's training] was a rejuvenating and refreshing experience."

Mary Walsh
Mathematics Department Chairperson

With funding from the Koret Foundation, HUSD leaders implemented NMSI's LTF program, providing the resources needed to raise expectations and develop advanced levels of thinking and learning, especially in mathematics.

Through LTF, NMSI provided HUSD educators with hands-on training, vertical teaming strategies, culturally responsive classroom resources, and small-group support through a blend of in-person and virtual delivery.

"The NMSI training was amazing and refreshing," said Mary Walsh, a math teacher and the Mathematics Department Chairperson at Hayward High School. "I hadn't had the opportunity to attend a training that directly impacted my teaching in several years. It was a rejuvenating and refreshing experience. The training provided me with materials that I could tailor for my direct classroom use. It also helped me work with students who needed help and support in a different way."

The relationship between NMSI and HUSD deepened during the COVID-19 pandemic. With the transition to remote learning, NMSI and teams of district and school site educators collaborated to ensure teachers and students continued to receive support throughout the shift in learning.

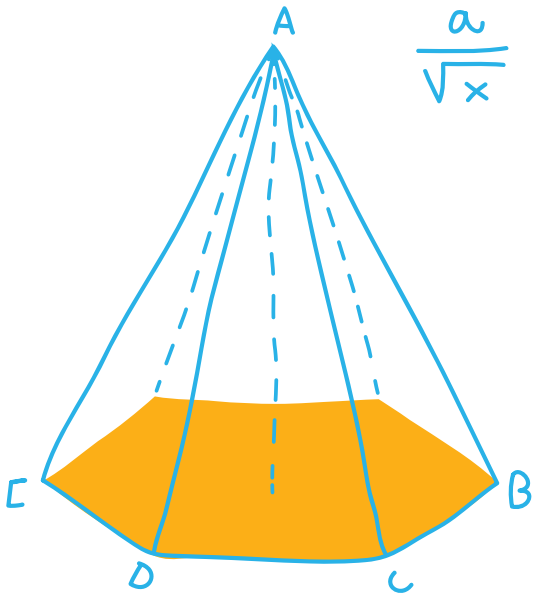
"At each one of our schools, a site administrator, a teacher, and a counselor helped implement NMSI's LTF program," said Veronica Ortiz, College and Career Coordinator at Hayward Unified School District. "The team effort helped us implement LTF, involve teachers in professional development opportunities and involve students and families to ensure success."

GEOMETRY FOR ACCELERATION

Working together with the NMSI team, HUSD leadership recognized students in the district were struggling and failing math and science courses - and something needed to change. Determined to solve the issue, the district worked with math leads from each of the three high schools within HUSD to look at students' scores and trends.

From there, a common thread became apparent - geometry.

Traditionally, most American high schools teach Algebra I in ninth grade, geometry in tenth grade and Algebra II in eleventh grade. At HUSD, the math leads noticed students were failing their math courses heading into ninth grade. There were also big learning gaps between fifth and sixth grade, a pivotal grade as students learn decimals, fractions, and numerical expressions.



Recognizing the gaps, HUSD worked with NMSI to implement a summer geometry course to prepare students for Algebra II.

"We partnered with NMSI and implemented a geometry acceleration program because it's important to provide opportunities to students who are furthest from opportunities," said Paul Gonsalves, Counselor at Hayward High School. "Students come from diverse backgrounds. For some families, there's not a lot of math happening at home."

For students to succeed in math (and other core subjects), a strong foundation is needed. If students haven't mastered a concept - such as real numbers or functions - before moving on to the next grade, grasping new concepts the following fall is near impossible. NMSI's LTF program helps teachers model critical-thinking strategies and deepens conceptual understanding, ensuring students master important math concepts, benchmarks and learning standards.

“I’M REALLY GLAD I TOOK PART IN THIS.”

As a counselor, Gonsalves recognizes it’s difficult to carve out time for growth, now more than ever, as teachers address unfinished learning.

Gonsalves and freshman algebra teachers in the district worked to identify students for the geometry acceleration program and approached students, offering a geometry course during the summer months to prepare students for Algebra II the following fall. The Geometry for Acceleration program meant giving up some summer weeks for intensive math classes with a lot of content squeezed into a short amount of time. Gonsalves worked with the algebra teachers at the three high schools to pinpoint students who would do well and seemed up for the challenge.

“We identified students by their grades, test scores, and teacher nominations,” added Gonsalves. “The process was subjective, but instilled confidence in our students and reminded them that they have what it takes to succeed. Many of these students perhaps should’ve been accelerated in middle school math, but were missed. Now, these students have opportunities to reach AP math courses their junior and senior year.”

For some students, it was the first time they were approached about an advanced academic program.

For five weeks, students from the three high schools at HUSD worked together with teachers for five and a half hours each day during the summer. The result? **91 percent of the students in the Geometry for Acceleration program advanced to Algebra II**, while just 78 percent of the more traditional, advanced students not in the program advanced to Algebra II.

For Gonsalves, the encouragement and benefits of believing in students cannot be understated. Once students gained momentum during those five weeks, it was a game-changer. Feedback after the program noted students’ appreciation and gratitude, with notes like: “I’m really glad I took part in this. I will now be going to Algebra II because of this opportunity.”

The teachers who taught the Geometry for Acceleration program felt the same, with all three volunteering to teach the program again the following summer.

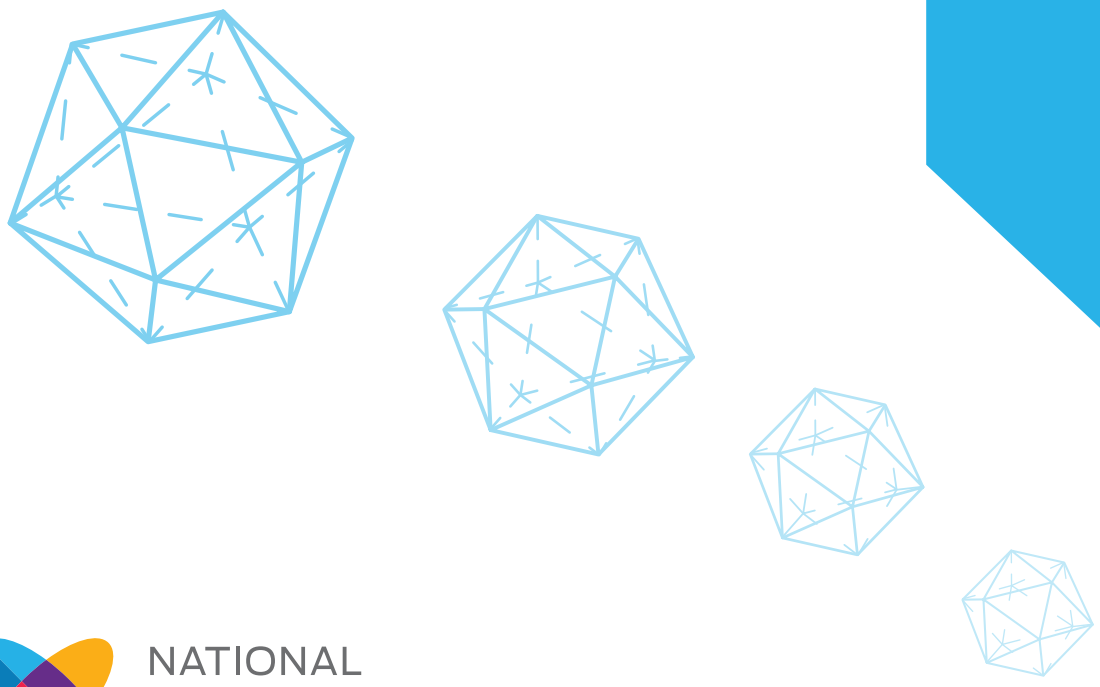
SET UP FOR SUCCESS

With a strong partnership between HUSD and NMSI, more students are going into AP courses and the STEM field. In fact, 47 percent of the students who participated in the Geometry for Acceleration program are taking an AP math course next school year, with students requesting AP Calculus and AP Statistics courses. However, most importantly, students are recognizing their strengths and believing in themselves, according to Walsh.

"I had a student that wasn't doing well in precalculus and school in general," she said. "The student wasn't engaged and just didn't care. **That same student became extremely motivated when she saw the purpose in what she was doing**. That purpose came to light when we worked on some of the lessons from the library. She was more stimulated. Now, she just got into the University of California, Berkeley, and is going to major in math!"

To date, more than 50,000 teachers nationwide—including teachers at HUSD—have participated in NMSI's LTF program, using their expertise to build the capacity of their schools and districts to advance student achievement at all grade levels.

Learn more about NMSI and Laying the Foundation here.



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