



# The Calculus Project

**A new initiative to drive students toward success in college and career**

The Calculus Project is changing the way schools support students of color and low-income students to achieve success in advanced mathematics.

The Calculus Project (TCP) is a grassroots-style initiative to dramatically increase the number of students of color and low-income students who complete AP Calculus in high school. TCP is defined by its comprehensiveness, its very high expectations, its cultural sensitivity, and its commitment to sustainability.



# WHAT IS THE CALCULUS PROJECT (TCP)?

The Calculus Project (TCP) is a series of coordinated, research-supported components implemented over a five-year period.

- TCP schools offer preparatory courses in the summer, and re-teaching/tutoring during the school year, supporting mathematics instruction from grade 8 through grade 12.
- TCP schools intentionally group students of color and low-income students in the same class. Research shows this creates a more comfortable and productive academic environment for these students.
- TCP schools offer after-school study groups with teacher support. This gives students the content knowledge, the skills, and more confidence to succeed in high-level math classes. The after-school study groups often evolve into student-run “beyond school” voluntary study groups, which is rarely seen with historically underperforming students.
- The Pride Curriculum provides instruction on the historical accomplishments of STEM leaders of color.
- TCP enables some students to become peer teachers during the 11th and 12th grades.

“Upon meeting with the cohort of Wayland students who had completed their first summer session with The Calculus Project, I knew right away that the program was a success. I knew because the students gushed with enthusiasm for the program and its staff, and most importantly for the study of mathematics.

**Paul Stein, Superintendent  
Wayland, MA Public Schools**

## Impact

In June 2014, Brookline Public Schools graduated the first cohort of students from their Calculus Project program. The success is extraordinary:



Nearly 75% of students enrolled in and succeeded in Calculus Honors or AP Calculus.



Average math SAT score for the first cohort was 587 – 10% higher than the national average for math that year.



100% of the students are now in college; many are majoring in STEM disciplines.

## Benefits

- Well-prepared students who achieve in honors and AP-level math courses
- Increased engagement and enrollment in higher-level math for all students, including underrepresented groups
- Better performance on math grades and state assessments
- Improved parental involvement
- Enhanced teaching capacity and teacher satisfaction
- Greater numbers of students assuming leadership/peer-tutoring roles
- Partnerships with external stakeholders to support the program and STEM education in general

“At a time when the Governor and I have been struggling mightily to close achievement gaps in the nation’s leading educational achievement state, the Calculus Project stands out as a beacon of success.

“Dr. Mims has pioneered a unique blend of support, accelerated academics and high expectations to create a program with exceptional results. The Calculus Project is living proof that if adults can put in place the proper conditions of learning, all of our students can achieve at high levels and become college and career ready.”

**Paul Reville**  
former Secretary of  
Education for the  
Commonwealth of  
Massachusetts

“Success in higher-level school mathematics courses is strongly associated with college enrollment and attainment of an undergraduate degree. Completion of calculus in high school is the strongest predictor of college completion.”

**Adelman, 1999, 2006; Harrell & Forney, 2003; Horn & Nunez, 2000**

### Client Sites

- Orange County Public Schools - Orlando, FL
- Youth Community and Development High School, NY
- TechBoston Academy, MA
- John D. O’Bryant School of Math and Science, MA
- Bedford Public Schools, MA
- Brookline Public Schools, MA
- Lexington Public Schools, MA
- Lynnfield Public Schools, MA
- Newton Public Schools, MA
- Milton Public Schools, MA
- Malden Public Schools, MA
- Wayland Public Schools, MA
- The Calculus Project and Leadership Academy at Boston University



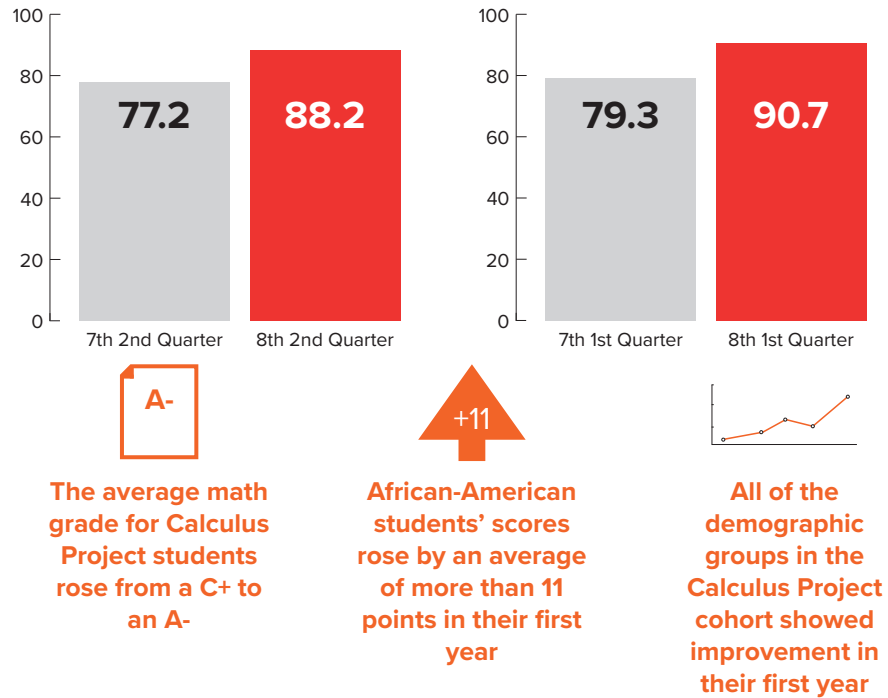
TCP students participating in a lab exercise at Harvard Medical School

# Calculus Project – Client Results

## Salemwood Middle School

Malden, MA

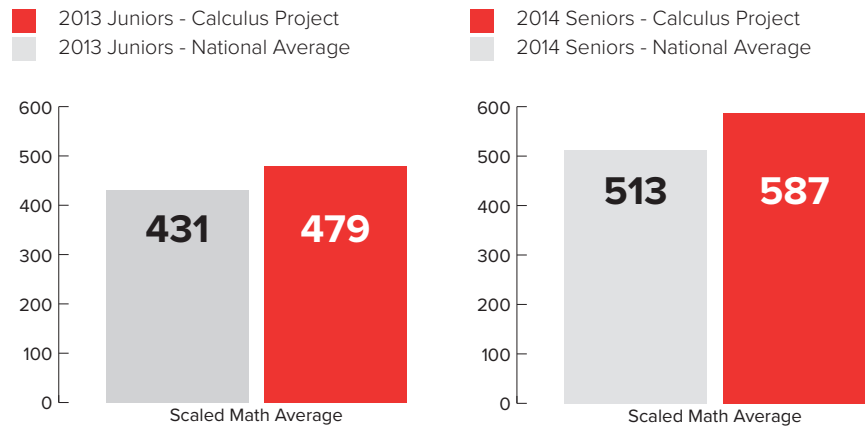
In July 2015, students at Salemwood Middle School became the first cohort to join The Calculus Project. The students showed strong growth from 7<sup>th</sup> grade pre-algebra to 8<sup>th</sup> grade algebra.



## PSAT and SAT Testing Data

Brookline, MA

Calculus Project students outperform their peers on PSAT and SAT math tests.



## Massachusetts State Testing Data

Brookline, MA

Starting with the first cohort at Brookline High School, Calculus Project students outperform state averages by a wide margin.

