



Newton Public Schools  
100 Walnut Street  
Newton, MA 02460

Mary Eich  
Assistant Superintendent for Teaching & Learning  
Telephone: (617) 559-6125

## MEMORANDUM

To: David Fleishman  
From: Mary Eich, Assistant Superintendent for Teaching & Learning  
Date: September 24, 2014  
Re: Report on the Calculus Project

This summer fifty-six rising seventh and eighth grade students spent 22 days studying mathematics at Newton South through the Calculus Project.

The attached report provides information about this endeavor, with connections to Newton Public Schools initiatives and priorities. I look forward to our discussion on Monday night.

## **The Calculus Project**

The Calculus Project is an exciting new initiative in Newton designed to increase the number of low income, African American and Hispanic American students who enroll in and successfully complete Calculus in high school. An ambitious effort to narrow the achievement gap in mathematics, the Calculus Project is comprised of summer enrichment courses and on-going academic support during the school year. The summer enrichment courses focus on pre-teaching core mathematical concepts vital to success in upper level math courses.

The Calculus Project in the Newton Public Schools is modeled after a similar endeavor in Brookline. Since its inception in June 2009, the African American Scholars' Calculus Project (AASCP) at Brookline High School has dramatically increased the number of African American students who enroll in Calculus Honors and AP Calculus.

Hoping to mirror the success of the Calculus Project in Brookline, Newton administrators invited Brookline's Calculus Project Director Adrian Mims to a planning meeting in Spring 2013. We decided to launch a small summer program for sixth grade METCO students who showed promise in mathematics. With strong support from METCO Director Lisa Reed, eight students enrolled in our four-week summer program at Newton South in July 2013.

With a small success behind us, we started earlier in the 2013-14 academic year, and by June 2014 had over 60 rising seventh and eight graders interested in the Summer 2014 program. Ultimately, 56 students completed the program: 10 from Bigelow, 16 from Day, 17 from Oak Hill, and 13 from Brown. Thirty-six were rising seventh graders, and twenty were rising eighth graders.

Curriculum was organized by middle school math coaches and reflects the domains of the Common Core State Standards. Rising seventh graders previewed, rational numbers, expressions, equations & inequalities, ratio & proportion including scale factors, similarity and congruence, writing and solving, probability, and geometry, including lines, angles & triangles perimeter, area, and volume.

Rising eighth graders previewed equations, linear functions, bivariate data and scatter plots, systems of equations, radicals and the Pythagorean Theorem, scientific notation and exponents, volume of all things round, and geometry.

Five Newton Middle School math teachers instructed the students in groups of 10 to 12, and a program director organized schedules, transportation, assessment, field trips, guest speakers, and follow up with parents. Pre- and post-tests were developed and delivered for all units, as well as student surveys. Analysis of this data is underway at Newton North.

In our meeting Monday night we will discuss outcomes and look ahead to issues of financial sustainability.