

# Wayzata High School, Plymouth, MN

## Mathematics Program Evaluation

### Background

Wayzata is a suburban community located ten miles west of Minneapolis. School District #284 covers an area of 38 square miles with a population of 60,000. Wayzata High School (WHS) is fed by seven elementary schools and three middle schools. Sixty-nine percent of the faculty have degrees at the master's level or beyond. WHS enrollment is approximately 3,000 students. Overall, the Wayzata school community places a great deal of emphasis on mathematics. Both the community and the WHS faculty expect students to study mathematics and most students surpass the graduation requirements.

### Implementation

Fall 2005 is the eighth year that WHS is using the four-course Core-Plus Mathematics curriculum *Contemporary Math in Context* (CMIC). This is our only mathematics curriculum and we offer both a regular and an honors track. We are presently using UCSMP *Everyday Mathematics* in Wayzata's elementary schools and the *Connected Mathematics Project* (CMP) in our middle schools. Our implementation process involved starting with Core-Plus Mathematics Course 1 and adding the next course each year, while phasing out the sequential mathematics curriculum. Most WHS mathematics teachers have participated in at least one year of Core-Plus Mathematics implementation workshops and many have had multiple years of professional development. In Fall 1997, WHS instituted a block schedule with four 86-minute classes per day. This schedule allows students to double-up on mathematics courses, if they desire. Therefore, some students complete four years of mathematics in less than four years of schooling. The first graduating class of students who have studied Core-Plus Mathematics courses was the 2002 class.

### Key Findings

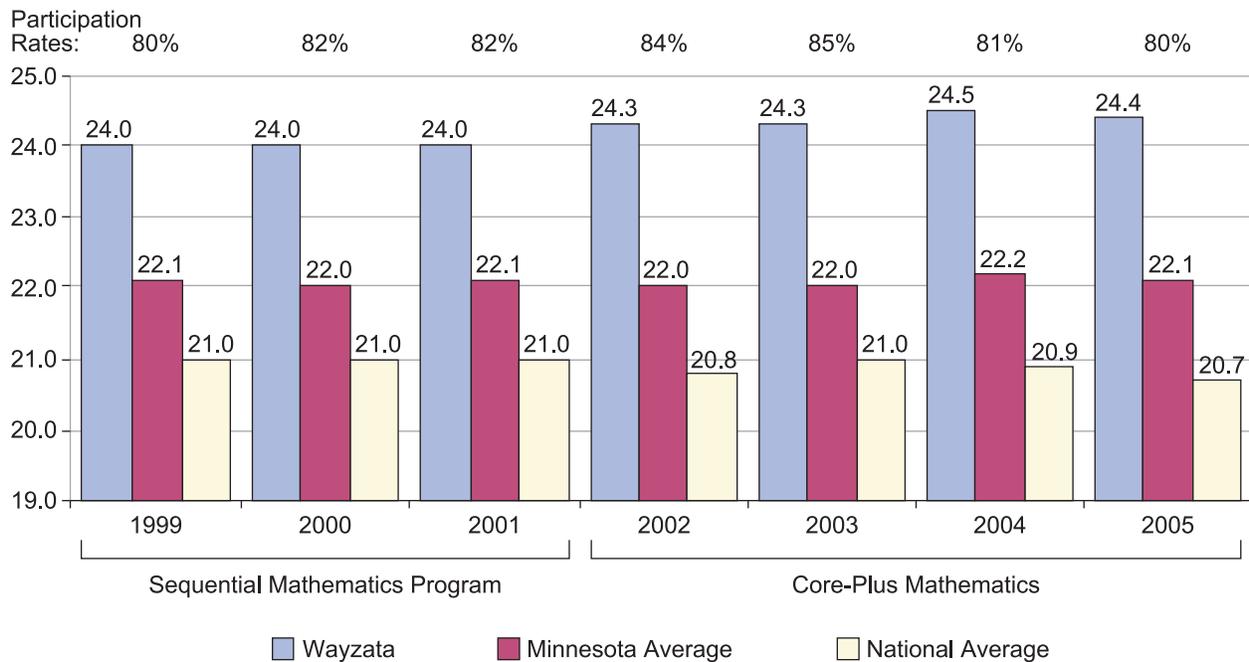
- All students (except one English Language Learner in the class of 2005) who were eligible for graduation had completed the Minnesota state requirements for the Basic Skills Test (BST) in math.
- The results from the new Minnesota Comprehensive Assessment (MCA) 11th grade math test show that Wayzata's average scores are well above state averages.
- On average 67% of the student body completes four years of mathematics. For most this is Core-Plus Mathematics Courses 1, 2, 3, and 4. Some students, completing Connected Mathematics, are accelerated into Core-Plus Mathematics Course 2 and take AP courses their fourth year.
- Wayzata students scored considerably higher than the national average across all subjects on ACT, and SAT. Seven-year trends show scores on the ACT to be steady average scores. SAT participation is not high in our district. Recently, average SAT scores are slightly higher with slightly lower participation.

- The percentage of Wayzata students exceeding growth expectation by the ACT from the PLAN to the ACT tests is largest in the mathematics subject area.
- The number of Wayzata students taking Advanced Placement (AP) courses and tests has steadily increased over the last seven years. The percentage of students taking the advanced placement tests and achieving a score of three or higher has been steadily increasing.
- Wayzata’s team participating in the Minnesota Mathematics League Competition has won the competition three consecutive years, 2003, 2004, and 2005. No high school in the state has won the competition two consecutive years.

## ACT

The ACT data, shown in Figure 1, indicate a slight increase in the average composite scores from 1999 to 2005. Wayzata students’ average composite ACT scores were consistently above the state and national averages. (Because Wayzata is an ACT test administration site, individual subject area scores are not available for students who attended Wayzata.)

**Figure 1: ACT Average Composite Scores, 1999 to 2005**

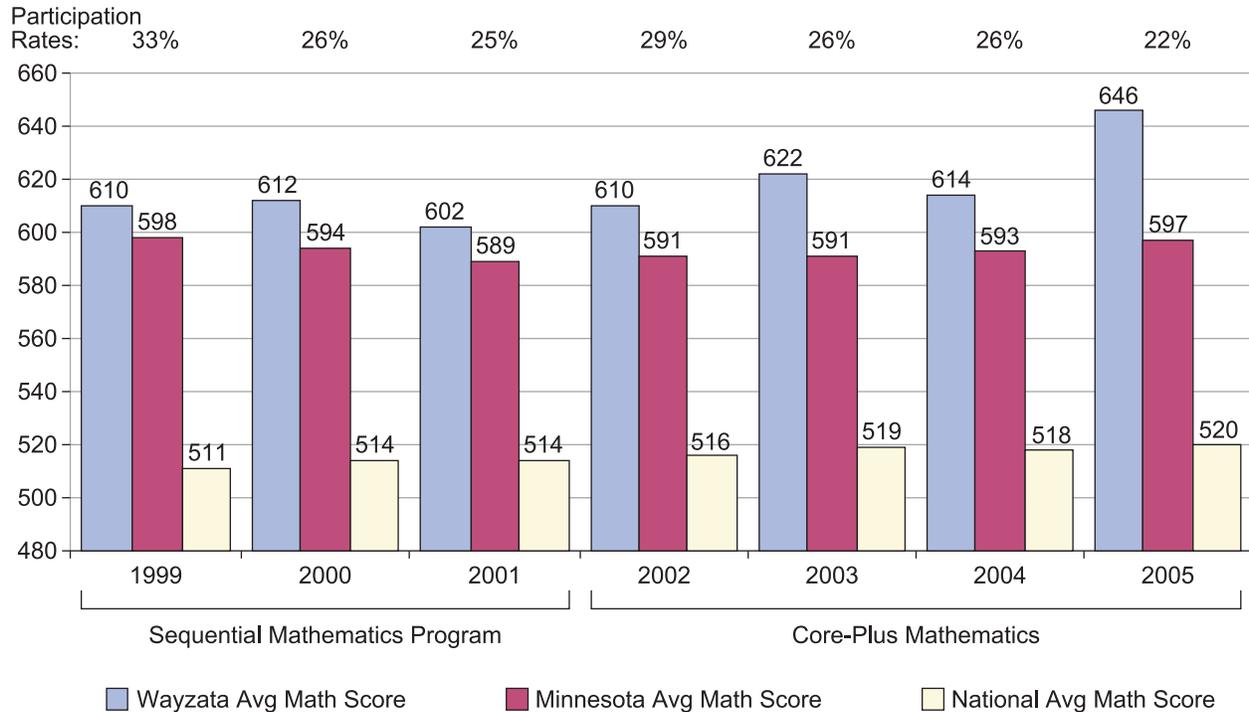


In 2005, Wayzata purchased a report from ACT that had not been previously acquired. This report shows the amount of growth from the PLAN to ACT. Since our population is fairly stable, this information along with the ACT’s prediction of typical growth in schools provides us another measure of student achievement. According to the ACT report 14% of Wayzata students should have grown more than expected by ACT. The percentage of Wayzata students exceeding growth expectations in each subject area was higher than the predicted 14%. The best results were in the mathematics subtest with 28% of students exceeding the predictions by ACT.

## SAT

Figure 2 shows results for the SAT Math scores from 1999 through 2005. Data indicate a fairly level pattern of math scores prior to adoption of the Core-Plus Mathematics program. Recently, there has been an increase in average scores, but participation rates are slightly lower. This decline in participation rates is because the counselors have recently been encouraging only our highest achieving students to take the SAT test.

**Figure 2: SAT Average Math Scores, 1999 to 2005**



## Advanced Placement Tests

Wayzata offers AP Calculus AB, AP Calculus BC, and AP Statistics. We have offered AP Calculus for over 22 years and AP Statistics for 9 years. We have almost doubled the enrollment in our AP Statistics course since utilizing the Core-Plus Mathematics curriculum. The tables below show the number of students taking the Calculus AB, Calculus BC, and Statistics AP tests for 1999–2005. They also show the percent of students scoring three or higher on each exam. The data show an increasing number and percentage of students taking the AP tests and scoring higher each year. Since we are on a semester block schedule, students complete AP Statistics and AP Calculus AB in January. These students must take the AP exam in the spring. A large percentage of these students often choose not to take the spring exams.

AP Examination Results 1999–2005				
Calculus AB				
	Test Year	Number Taking Course	Percent Taking Test	Percent Scoring 3 or Higher
<b>Sequential Mathematics Program</b>	1999	43	23%	30%
	2000	56	7%	56%
	2001	52	12%	67%
<b>Core-Plus Mathematics Program</b>	2002	37	27%	65%
	2003	40	14%	81%
	2004	45	62%	86%
	2005	62	47%	83%

AP Examination Results 1999–2005				
Calculus BC				
	Test Year	Number Taking Course	Percent Taking Test	Percent Scoring 3 or Higher
<b>Sequential Mathematics Program</b>	1999	74	68%	64%
	2000	76	91%	46%
	2001	70	86%	68%
<b>Core-Plus Mathematics Program</b>	2002	58	84%	73%
	2003	72	93%	87%
	2004	55	82%	67%
	2005	71	85%	92%

AP Examination Results 1999–2005				
Statistics				
	Test Year	Number Taking Course	Percent Taking Test	Percent Scoring 3 or Higher
<b>Sequential Mathematics Program</b>	1999	74	42%	74%
	2000	68	41%	89%
	2001	34	47%	63%
<b>Core-Plus Mathematics Program</b>	2002	68	53%	81%
	2003	164	43%	76%
	2004	142	35%	78%
	2005	192	57%	84%

### Minnesota Comprehensive Assessments (MCA)

The MCA 11th grade math test was introduced during the 2001-2002 school year to meet the NCLB regulations. It is an assessment of whether a school's curriculum is aligned with the state standards. Passing the exam is not a graduation requirement; therefore, it is not a "high stakes" test for students. Wayzata met AYP with a proficiency index rate of 90.77 in 2004 and 93.77 in 2005. The state's target index rate was 74.06. Wayzata student participation in 2004 was 97.68% and in 2005 was 99.05%. The state's target rate was 95%.

## **National Merit Scholars**

The class of 2004 has the distinction of including 12 National Merit qualifiers and 18 commended students for a total of 30 students recognized. This is the most students' recognized since 1998, when 17 students were commended and 10 students qualified for a total of 27 students recognized. The class of 2005 had 14 National Merit qualifiers and 15 commended students.

## **Mathematics Competitions**

In 2004, Wayzata won the Minnesota State High School Math League's state tournament for the second straight year. This is the first time there has been back-to-back state champions in the 26-year history of the league. In 2004, Wayzata also had five students selected to the state all star team and was the top scoring school in Minnesota on the American Mathematics Competition (AMC).

In 2005, Wayzata again won the Minnesota State High School Math League's state tournament. Six students were selected to the state all-star team. For the second year in a row, Wayzata was the top scoring school in Minnesota on the American Mathematics Competition (AMC).

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