

Trends in Grade 6 Enrollment in Math B or Higher: 2001 to 2006

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Background

The Montgomery County Public Schools (MCPS) encourages students to complete Algebra 1 in middle school because Algebra 1 is the gateway to a rigorous high school mathematics sequence (Campbell, Hombo, & Mazzeo, 2000; Von Secker, 2005). One indicator that students will meet this goal is that they are enrolled in an accelerated mathematics course in Grade 6. These courses include the MCPS Grade 7 and Grade 8 mathematics courses Math B and Math C, respectively, as well as Investigations into Mathematics (IM) and Algebra 1 or higher.

This research brief describes the number and percentage of Grade 6 students who were enrolled in accelerated mathematics courses at the end of academic years 2000–2001 to 2005–2006. Results can be used to identify trends in Grade 6 enrollment and inform discussions about how to narrow differences in mathematics enrollment patterns associated with gender; race/ethnicity; and participation in Free and Reduced-price Meals System (FARMS), special education, and English Language Learner (ELL) services.

Methodology

Mathematics enrollment is reported for 63,005 Grade 6 students who received fourth quarter report cards from June 2001 to June 2006 (approximately 10,500 students per year). Students' mathematics levels were obtained from course enrollment data that appeared on the fourth quarter report cards issued in June. Students enrolled in two or more mathematics courses during the fourth quarter were assigned the highest mathematics level.

Results

In June 2006, MCPS recorded the highest number (4,362) and percentage (42.5) of Grade 6 students enrolled in Math B or higher in MCPS history (Table A1). Compared with enrollment rates in 2001, Grade 6 enrollment in accelerated mathematics in 2006 was higher for males; females; students of all

racess/ethnicities; and students who received FARMS, special education, and ELL services (Table A1).

Over the past six years, nearly identical percentages of males and females were enrolled in Math B or higher at the end of Grade 6 (Table A1). Increases in Math B enrollment among all females (9.0 percentage points) have been about the same as for all males (8.4 percentage points). However, the increases varied for males and females of different races/ethnicities. Among Asian American Grade 6 students, increases in male enrollment in Math B or higher outpaced those of females. In contrast, African American, Hispanic, and White female enrollment in Math B or higher increased at rates greater than those of males of the same race/ethnicity.

While Grade 6 enrollment in Math B or higher has increased overall, racial/ethnic differences in Grade 6 enrollment in Math B or higher have increased from about 30 percentage points in 2001 to about 38 percentage points in 2006. In 2006, nearly 60% of Asian American and White students were enrolled in Math B or higher at the end of Grade 6, compared with about 20% of African American and Hispanic students (Figure 1).

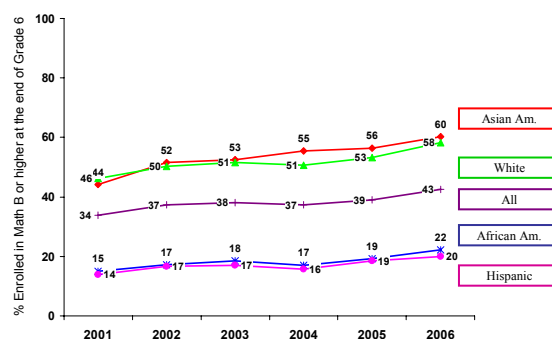


Figure 1. Percentage of Grade 6 students who were enrolled in Math B or higher in June 2001 through June 2006 by race/ethnicity.

Over the past six years, Grade 6 students who received FARMS, special education, and ELL services enrolled in Math B or higher at rates 25 to 30

percentage points lower than the district average enrollment rate (Figure 2). These differences are increasing. Since 2001, increases in Grade 6 enrollment in Math B or higher among students who received FARMS (6.3 percentage points), special education (2.7 percentage points), and ELL (2.9 percentage points) services have lagged behind the district average increase (8.7 percentage points).

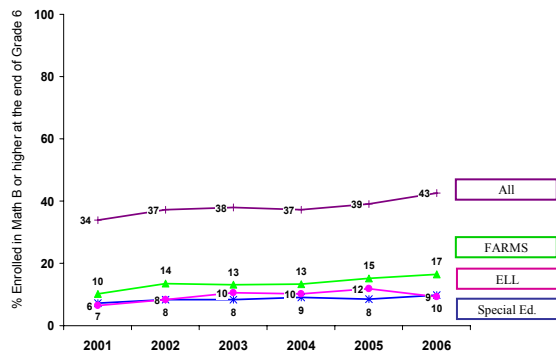


Figure 2. Percentage of Grade 6 students who were enrolled in Math B or higher in June 2001 through June 2006 by service group.

Table A2 provides a summary of the number and percentage of Grade 6 students who were enrolled in Math B or higher in June 2006, disaggregated by middle school and race/ethnicity. On average, the percentage of Asian American and White students enrolled in Math B or higher was more than twice the percentage of African American and Hispanic students at the same middle school who were enrolled in Math B or higher.

Discussion

In 2006, more Grade 6 students were enrolled in Math B or higher than ever before in MCPS history. The trend in accelerated mathematics course enrollment in Grade 6 is encouraging. Even more encouraging is evidence that all groups of students have contributed to the positive trend.

There are differences in Grade 6 enrollment rates in Math B or higher associated with race/ethnicity and participation in FARMS, special education, and ELL services. These differences cannot be narrowed without efforts to increase Grade 6 accelerated mathematics enrollment of underrepresented groups of students at rates that exceed the district average.

References

Campbell, J. R., Hombo, C. M., and Mazzeo, J. (2000). *NAEP 1999: Trends in academic progress: Three decades of student performance*. Washington, DC: U.S. Department of Education.

Von Secker, C. (2005). *The impact of taking Algebra I versus Math C in Grade 8 on high school mathematics course taking and SAT scores*. Rockville, MD: Montgomery County Public Schools.

Table A1
 Percentage and Number of Grade 6 MCPS Students
 Enrolled in Math B or Higher in June
 by Demographic Group and Academic Year

Demographic Group	% (N) Enrolled in Math B or Higher in Grade 6						Percentage Point Change (2001 vs. 2006) ^a
	June 2001	June 2002	June 2003	June 2004	June 2005	June 2006	
All MCPS	33.9 (3561)	37.3 (4001)	38.0 (4025)	37.3 (3916)	39.0 (4062)	42.5 (4362)	8.7
Male	34.0 (1858)	37.0 (2046)	38.2 (2080)	37.9 (2069)	39.1 (2068)	42.4 (2238)	8.4
Female	33.7 (1703)	37.6 (1955)	37.9 (1945)	36.6 (1847)	38.8 (1994)	42.7 (2124)	9.0
African American	14.9 (339)	17.1 (408)	18.5 (427)	16.9 (400)	19.3 (468)	22.2 (519)	7.3
Male	14.1 (162)	15.8 (193)	18.1 (218)	16.0 (192)	18.1 (222)	20.2 (239)	6.1
Female	15.8 (177)	18.5 (215)	18.9 (209)	17.9 (208)	20.4 (246)	24.3 (280)	8.5
Asian American	44.3 (606)	51.5 (733)	52.5 (766)	55.4 (838)	56.4 (839)	60.2 (914)	15.9
Male	43.3 (302)	50.7 (381)	50.6 (379)	55.3 (430)	55.4 (426)	61.5 (486)	18.2
Female	45.3 (304)	52.4 (352)	54.5 (387)	55.5 (408)	57.4 (413)	58.7 (428)	13.4
Hispanic	13.9 (239)	16.6 (304)	16.9 (328)	15.8 (302)	18.6 (376)	19.9 (413)	6.0
Male	14.3 (129)	16.6 (153)	16.2 (161)	15.8 (154)	18.8 (196)	19.3 (200)	5.0
Female	13.5 (110)	16.6 (151)	17.7 (167)	15.7 (148)	18.3 (180)	20.6 (213)	7.1
White	46.2 (2371)	50.2 (2545)	51.5 (2496)	50.6 (2365)	53.2 (2361)	58.2 (2504)	12.0
Male	46.8 (1263)	50.0 (1314)	52.9 (1316)	51.8 (1287)	54.3 (1212)	58.0 (1309)	11.2
Female	45.6 (1108)	50.5 (1231)	50.0 (1180)	49.3 (1078)	52.0 (1149)	58.3 (1195)	12.7
FARMS	10.2 (270)	13.5 (369)	13.2 (365)	13.3 (365)	15.1 (421)	16.5 (429)	6.3
Special Education	7.2 (100)	8.4 (119)	8.3 (120)	9.0 (130)	8.5 (124)	9.9 (130)	2.7
ELL	6.4 (45)	8.3 (55)	10.5 (67)	10.2 (74)	11.8 (79)	9.3 (58)	2.9

^a Percentage point change may differ by 0.1 percentage point from difference of 2001 and 2006 percentages because of rounding.

Note: Includes students enrolled in Grade 6 in Chevy Chase and North Chevy Chase elementary schools and special schools. Mathematics enrollment was calculated from fourth quarter report card data as of June of the academic year. Data are not reported separately for American Indian students.

Table A2
 Number and Percentage of Grade 6 Students Enrolled in Math B or Higher in June 2006
 by Middle School and Racial/Ethnic Group

Middle School	All Students			African American			Asian American			Hispanic			White		
	N Students	N Math B or Higher	% Math B or Higher	N Students	N Math B or Higher	% Math B or Higher	N Students	N Math B or Higher	% Math B or Higher	N Students	N Math B or Higher	% Math B or Higher	N Students	N Math B or Higher	% Math B or Higher
All Grade 6 ^a	10257	4362	42.5	2336	519	22.2	1519	914	60.2	2071	413	19.9	4304	2504	58.2
Argyle	271	92	33.9	112	30	26.8	44	33	75.0	86	15	17.4	28	14	50.0
Baker	229	104	45.4	30	9	30.0	16	7	43.8	14	4	28.6	169	84	49.7
Banneker	261	80	30.7	139	24	17.3	44	24	54.5	34	7	20.6	44	25	56.8
Briggs Chaney	294	113	38.4	134	40	29.9	48	25	52.1	48	6	12.5	63	42	66.7
Cabin John	324	168	51.9	27	4	14.8	101	69	68.3	14	4	28.6	182	91	50.0
Clemente	389	140	36.0	108	20	18.5	78	41	52.6	73	14	19.2	130	65	50.0
E. Brooke Lee	181	50	27.6	64	11	17.2	15	8	53.3	68	11	16.2	34	20	58.8
Eastern	274	138	50.4	60	22	36.7	54	33	61.1	89	14	15.7	71	69	97.2
Farquhar	228	113	49.6	49	15	30.6	27	15	55.6	19	7	36.8	133	76	57.1
Forest Oak	269	85	31.6	68	13	19.1	28	17	60.7	101	12	11.9	72	43	59.7
Frost	351	189	53.8	13	3	23.1	128	85	66.4	20	5	25.0	190	96	50.5
Gaithersburg	236	77	32.6	68	15	22.1	27	18	66.7	63	5	7.9	77	39	50.6
Hoover	337	186	55.2	19	5	26.3	79	57	72.2	15	6	40.0	224	118	52.7
Julius West	331	160	48.3	57	11	19.3	60	35	58.3	62	16	25.8	151	97	64.2
Key	254	45	17.7	113	14	12.4	35	10	28.6	71	4	5.6	32	17	53.1
Kingsview	270	129	47.8	57	19	33.3	65	48	73.8	40	8	20.0	108	54	50.0
Lakelands Pk.	252	131	52.0	49	9	18.4	28	20	71.4	37	11	29.7	137	90	65.7
Loiederman	298	90	30.2	93	22	23.7	16	4	25.0	119	25	21.0	69	38	55.1
Martin L. King	279	112	40.1	91	18	19.8	28	20	71.4	55	12	21.8	105	62	59.0
Mont. Village	240	61	25.4	92	12	13.0	20	11	55.0	83	17	20.5	44	20	45.5
N. Bethesda	244	164	67.2	23	3	13.0	20	16	80.0	22	10	45.5	176	134	76.1
Neelsville	219	74	33.8	81	15	18.5	36	18	50.0	52	15	28.8	49	25	51.0
Newport Mill	215	58	27.0	46	12	26.1	25	10	40.0	92	12	13.0	52	24	46.2
Parkland	244	105	43.0	64	21	32.8	45	37	82.2	100	23	23.0	35	24	68.6
Poole	112	55	49.1	13	2	15.4	4	3	75.0	7	2	28.6	87	47	54.0
Pyle	404	235	58.2	14	6	42.9	49	29	59.2	27	10	37.0	313	189	60.4

continued

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Number and Percentage of Grade 6 Students Enrolled in Math B or Higher in June 2006
by Middle School and Racial/Ethnic Group

Middle School	All Students			African American			Asian American			Hispanic			White		
	<i>N</i> Students	<i>N</i> Math B or Higher	% Math B or Higher	<i>N</i> Students	<i>N</i> Math B or Higher	% Math B or Higher	<i>N</i> Students	<i>N</i> Math B or Higher	% Math B or Higher	<i>N</i> Students	<i>N</i> Math B or Higher	% Math B or Higher	<i>N</i> Students	<i>N</i> Math B or Higher	% Math B or Higher
All Grade 6 ^a	10257	4362	42.5	2336	519	22.2	1519	914	60.2	2071	413	19.9	4304	2504	58.2
Redland	248	109	44.0	48	11	22.9	33	21	63.6	64	10	15.6	102	66	64.7
Ridgeview	242	123	50.8	36	14	38.9	40	27	67.5	33	11	33.3	131	70	53.4
Rocky Hill	303	114	37.6	51	8	15.7	39	19	48.7	32	5	15.6	181	82	45.3
Rosa Parks	302	115	38.1	25	3	12.0	28	14	50.0	24	6	25.0	225	92	40.9
S. S. Internat.	283	128	45.2	81	21	25.9	22	17	77.3	103	25	24.3	77	65	84.4
Shady Grove	199	105	52.8	44	12	27.3	30	25	83.3	50	14	28.0	75	54	72.0
Sligo	200	71	35.5	46	13	28.3	23	13	56.5	89	17	19.1	42	28	66.7
Takoma Park	297	82	27.6	88	14	15.9	51	10	19.6	50	6	12.0	106	52	49.1
Tilden	248	136	54.8	29	5	17.2	37	25	67.6	34	12	35.3	146	93	63.7
Westland	231	146	63.2	29	12	41.4	21	12	57.1	32	9	28.1	147	112	76.2
White Oak	257	65	25.3	100	16	16.0	32	13	40.6	69	9	13.0	55	27	49.1
Wood	266	104	39.1	41	9	22.0	33	18	54.5	68	8	11.8	123	69	56.1

^a Includes Grade 6 students enrolled at Chevy Chase and North Chevy Chase elementary schools and special schools. Includes American Indian students.

Note: Mathematics enrollment was calculated from fourth quarter report card data as of June of the academic year. Data are not reported separately for American Indian students.