ies NATIONAL CENTER FOR EDUCATION STATISTICS
Institute of Education Sciences

the condition of education 2006

INDICATOR 15

Poverty and Student Mathematics Achievement

The indicator and corresponding tables are taken directly from *The Condition of Education 2006.* Therefore, the page numbers may not be sequential.

Additional information about the survey data and supplementary notes can be found in the full report. For a copy of *The Condition of Education 200*6, visit the NCES website (http://nces.ed.gov/pubsearch/pubsinfo.sap?pubid=2006071) or contact ED PUBs at 1-877-4ED-PUBS.

Suggested Citation:
U.S. Department of Education, National Center for Education Statistics. (2006). *The Condition of Education 2006,* NCES 2006-071, Washington, DC: U.S. Government Printing Office.

U.S. Department of Education
Institute of Education Sciences
NCES 2006-071

Academic Outcomes

Poverty and Student Mathematics Achievement

The mathematics performance of 4th-graders in high-poverty public schools was lower than that of their peers in low-poverty public schools.

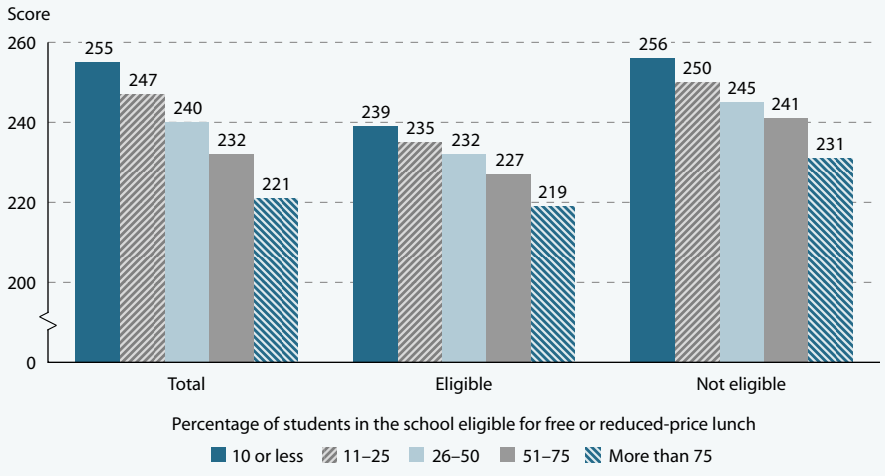
The National Assessment of Educational Progress (NAEP) collects background information on students, teachers, and schools, permitting analysis of student achievement relative to the poverty level of public schools, measured as the percentage of students eligible for free or reduced-price lunch through the National School Lunch program. In 2005, the average score on the 4th-grade mathematics assessment decreased as the percentage of students in the school who were eligible for the school lunch program increased. For example, students in the highest poverty public schools (those with more than 75 percent of students eligible for the school lunch program) had an average score of 221, compared with an average score of 255 for students in the lowest poverty public schools (those with 10 percent or less of students eligible) (see supplemental table 15-1).

This negative relationship between average achievement in mathematics and school-level poverty occurs when the performance of students who are eligible for the school lunch program is considered separately from that of other students. For example, the achievement gap between the average scores of 4th-graders in the lowest and highest poverty schools was 20 points among those eligible for the school lunch program, and 25 points among those not eligible.

Comparing schools with different concentrations of poverty reveals that the highest poverty public schools in 2005 differed from other public schools in terms of particular student characteristics. For example, they had the lowest percentage of White students, the highest percentage of Black and Hispanic students, and the highest percentage of students who reported always speaking a language other than English at home. They also had the highest percentage of 4th-graders who were taught by a teacher with less than 5 years of teaching experience (see supplemental tables 15-1 and 15-2).

A school's poverty concentration also led to differences in terms of school characteristics. Fourth-graders in the highest poverty public schools were more likely than their peers in public schools with lower levels of poverty to have a full-time mathematics specialist and to spend the most amount of class time on mathematics (7 hours or more per week).

POVERTY AND ACHIEVEMENT: Average mathematics score of public school 4th-graders, by whether the student was eligible for free or reduced-price lunch and the percentage of students in the school eligible for free or reduced-price lunch: 2005



NOTE: Data were not available for a small number of cases (1 percent of cases for race/ethnicity and 2 percent for eligibility for free or reduced-price lunch).

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 Mathematics Assessment, previously unpublished tabulation (October 2005).

FOR MORE INFORMATION:
Supplemental Notes 1, 4
Supplemental Tables 15-1, 15-2

Poverty and Student Mathematics Achievement

Table 15-1. Average mathematics score and percentage of public school 4th-graders, by percentage of students in the school eligible for free or reduced-priced lunch and selected student characteristics: 2005

			Students in school eligible to receive free or reduced-price lunch									
	Total		10 percent or less		11–25 percent		26–50 percent		51–75 percent		More than 75 percent	
Student characteristic	Score	Percent	Score	Percent	Score	Percent	Score	Percent	Score	Percent	Score	Percent
Total	**237**	**100**	**255**	**100**	**247**	**100**	**240**	**100**	**232**	**100**	**221**	**100**
Race/ethnicity[1]												
White	246	57	256	82	249	79	244	70	239	52	232	14
Black	220	17	236	4	231	6	226	12	221	20	214	36
Hispanic	225	20	244	5	236	8	231	12	226	21	221	44
Asian/Pacific Islander	251	4	265	8	256	5	248	4	241	3	237	3
American Indian	227	1	244	#	238	1	232	1	227	2	218	2
Language other than English spoken in the home												
Never	239	52	254	56	247	60	241	58	234	53	219	37
Sometimes	240	30	257	35	249	30	242	29	234	28	222	29
Always	229	18	254	10	241	10	233	13	227	19	221	34
Student eligibility for free or reduced-price lunch												
Eligible	225	46	239	7	235	19	232	36	227	59	219	87
Not eligible	248	52	256	91	250	80	245	62	241	39	231	12

Rounds to zero.

[1] Black includes African American, Hispanic includes Latino, Pacific Islander includes Native Hawaiian, and American Indian includes Alaska Native. Race categories exclude Hispanic origin unless specified.

NOTE: Detail may not sum to totals because of rounding and because data were not available for a small number of cases (1 percent of cases for race/ethnicity and 2 percent for eligibility for free or reduced-price lunch).

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 Mathematics Assessment, previously unpublished tabulation (October 2005).

Poverty and Student Mathematics Achievement

Table 15-2. Percentage of public school 4th-graders, by percentage of students in the school eligible for free or reduced-priced lunch and selected teacher and school characteristics: 2005

Teacher or school characteristic	Total	Students in school eligible to receive free or reduced-price lunch: 10 percent or less	11–25 percent	26–50 percent	51–75 percent	More than 75 percent
Total	**100**	**100**	**100**	**100**	**100**	**100**
Teacher characteristic						
Number of years spent teaching						
4 or less	21	17	17	18	22	28
5–9	26	26	24	23	24	31
10–19	27	29	28	28	27	24
20 or more	27	28	31	31	27	18
School characteristic						
Mathematics specialist available						
Full time	13	10	8	8	11	26
Part time	18	23	16	16	18	19
Not at all	69	68	75	76	71	56
Time per week spent in mathematics instruction						
Less than 3 hours	1	#	#	1	1	1
3–4.9 hours	16	20	20	18	15	11
5–6.9 hours	67	72	70	67	66	62
7 hours or more	16	9	10	14	18	26
Percent of students receiving Title I services						
10 or less	52	90	74	53	38	24
11–25	15	9	23	26	14	3
26–50	9	1	3	15	13	6
51–75	3	#	#	1	9	5
More than 75	20	#	#	5	25	62
Percent of students receiving English as a Second Language instruction						
10 or less	78	97	92	82	70	57
11–25	11	3!	7	15	16	11
26–50	6	#	1	3	9	12
51–75	3	#	#	#	3	9
More than 75	3	#	#	#	2	10
Enrollment						
Less than 300	11	6	10	14	13	10
300–499	32	30	34	38	31	28
500–699	31	39	33	27	31	31
700 or more	25	26	23	21	26	31
Location						
Central city	31	15	18	22	30	59
Urban fringe/large town	44	71	59	42	33	27
Rural/small town	25	14	23	36	36	14

Rounds to zero.

NOTE: Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 Mathematics Assessment, previously unpublished tabulation (October 2005).

Poverty and Student Mathematics Achievement

Table S15. Standard errors for the average mathematics score of public school 4th-graders, by whether the student was eligible for free or reduced-price lunch and the percentage of students in the school eligible for free or reduced-price lunch: 2005

Student characteristic	10 percent or less	11–25 percent	26–50 percent	51–75 percent	More than 75 percent
Total	**0.3**	**0.4**	**0.3**	**0.3**	**0.3**
Student eligibility for free or reduced-price lunch					
Eligible	1.3	0.7	0.3	0.4	0.3
Not eligible	0.3	0.4	0.3	0.5	0.9

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 Mathematics Assessment, previously unpublished tabulation (October 2005).

Poverty and Student Mathematics Achievement

Table S15-1. Standard errors for the average mathematics score and percentage of public school 4th-graders, by percentage of students in the school eligible for free or reduced-priced lunch and selected student characteristics: 2005

			Students in school eligible to receive free or reduced-price lunch									
	Total		10 percent or less		11–25 percent		26–50 percent		51–75 percent		More than 75 percent	
Student characteristic	Score	Percent	Score	Percent	Score	Percent	Score	Percent	Score	Percent	Score	Percent
Total	**0.2**	†	**0.3**	†	**0.4**	†	**0.3**	†	**0.3**	†	**0.3**	†
Race/ethnicity												
White	0.2	0.3	0.4	0.9	0.4	0.8	0.3	0.7	0.4	0.8	0.6	0.6
Black	0.3	0.3	1.6	0.4	1.0	0.4	0.8	0.5	0.6	0.7	0.4	0.8
Hispanic	0.3	0.3	1.3	0.3	1.1	0.4	0.7	0.5	0.7	0.8	0.4	0.9
Asian/Pacific Islander	0.7	0.1	1.3	0.7	1.5	0.4	1.0	0.2	1.5	0.2	1.4	0.2
American Indian	1.0	0.1	4.0	†	2.2	0.1	2.0	0.1	1.6	0.2	1.5	0.2
Language other than English spoken in the home												
Never	0.2	0.2	0.4	0.7	0.4	0.6	0.3	0.5	0.4	0.6	0.5	0.6
Sometimes	0.2	0.2	0.5	0.6	0.5	0.4	0.5	0.4	0.5	0.4	0.5	0.4
Always	0.4	0.2	1.2	0.5	1.0	0.5	0.7	0.3	0.7	0.5	0.5	0.5
Student eligibility for free or reduced-price lunch												
Eligible	0.2	0.3	1.3	0.3	0.7	0.4	0.3	0.4	0.4	0.7	0.3	0.5
Not eligible	0.2	0.3	0.3	0.7	0.4	0.5	0.3	0.5	0.5	0.6	0.9	0.5

† Not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 Mathematics Assessment, previously unpublished tabulation (October 2005).

Poverty and Student Mathematics Achievement

Table S15-2. Standard errors for the percentage of public school 4th-graders, by percentage of students in the school eligible for free or reduced-priced lunch and selected teacher and school characteristics: 2005

		Students in school eligible to receive free or reduced-price lunch				
Teacher or school characteristic	Total	10 percent or less	11–25 percent	26–50 percent	51–75 percent	More than 75 percent
Total	†	†	†	†	†	†
Teacher characteristic						
Number of years spent teaching						
4 or less	0.4	1.1	1.1	0.6	0.7	1.0
5–9	0.3	1.2	1.0	0.8	0.8	0.9
10–19	0.4	1.3	1.1	0.9	0.8	0.9
20 or more	0.4	1.2	1.2	1.0	0.9	0.7
School characteristic						
Mathematics specialist available						
Full time	0.5	1.4	1.3	0.8	0.8	1.2
Part time	0.6	1.9	1.4	1.2	1.3	1.2
Not at all	0.7	2.5	1.8	1.4	1.6	1.6
Time per week spent in mathematics instruction						
Less than 3 hours	0.1	†	†	0.2	0.2	0.2
3–4.9 hours	0.4	1.5	1.2	0.7	0.8	0.7
5–6.9 hours	0.5	1.6	1.2	1.0	1.0	0.9
7 hours or more	0.4	1.0	0.9	0.7	0.9	0.9
Percent of students receiving Title I services						
10 or less	0.8	1.6	2.1	1.7	1.4	1.2
11–25	0.6	1.4	2.0	1.5	1.0	0.4
26–50	0.5	0.5	0.7	1.3	1.1	0.9
51–75	0.3	†	†	0.4	1.0	0.8
More than 75	0.7	†	†	0.7	1.4	1.7
Percent of students receiving English as a Second Language instruction						
10 or less	0.6	0.9	1.4	1.2	1.7	1.5
11–25	0.5	0.9	1.3	1.1	1.3	1.1
26–50	0.4	†	0.5	0.6	1.0	1.3
51–75	0.3	†	†	†	0.7	1.1
More than 75	0.3	†	†	†	0.5	1.0
Enrollment						
Less than 300	0.3	0.8	1.0	0.9	0.9	0.7
300–499	0.7	2.0	1.7	1.3	1.4	1.2
500–699	1.0	2.7	1.8	1.3	1.7	1.8
700 or more	0.8	2.4	1.6	1.1	1.7	1.7
Location						
Central city	0.3	1.2	1.4	0.9	1.4	1.0
Urban fringe/large town	0.3	1.6	1.4	1.1	1.6	1.1
Rural/small town	0.3	1.5	1.4	1.1	1.4	0.8

† Not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 Mathematics Assessment, previously unpublished tabulation (October 2005).