



**HOUSTON INDEPENDENT
SCHOOL DISTRICT**

**NATIONAL ASSESSMENT
OF EDUCATIONAL
PROGRESS**

Trial Urban District Assessment

MEMORANDUM

December 8, 2009

TO: Board Members

FROM: Terry B. Grier, Ed.D
Superintendent of Schools

SUBJECT: **NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS (NAEP) TRIAL
URBAN DISTRICT ASSESSMENT (TUDA): MATHEMATICS 2009
RESULTS**

CONTACT: Carla Stevens, 713-556-6700

The 2009 NAEP mathematics assessment has been released for the districts that participated in the Trial Urban District Assessment program. NAEP, also known as the Nation's Report Card, is the nation's only federally authorized survey of student achievement in various subject areas. NAEP is administered by the National Center for Education Statistics (NCES), an agency within the U.S. Department of Education's Institute of Education Sciences. The Houston Independent School District (HISD) is one of 18 large urban districts that voluntarily participated in the TUDA in 2009.

Student performance on the 2009 NAEP mathematics assessments at grades 4 and 8 is reported by using scale scores, which represent equal units on a continuous scale, using numbers that range from 0 to 500. Also, student performance is reported by using the percentage of students who attained the achievement levels, Basic, Proficient, and Advanced. The National Assessment Governing Board (NAGB) defines the achievement levels as follows:

- *Basic*: denotes partial mastery of prerequisite knowledge and skills that are fundamental for proficient work at each grade.
- *Proficient*: represents solid academic performance for each grade assessed. Students reaching this level have demonstrated competency over challenging subject matter, including subject matter knowledge, application of such knowledge to real-world situations, and analytical skills appropriate to the subject matter.
- *Advanced*: signifies superior performance.

The NAEP assesses mathematics in five content strands: number properties and operations, measurement, geometry, data analysis and probability, and algebra.

Results of the 2009 NAEP grade 4 and 8 mathematics assessment are presented in the following tables and graphs. Due to sampling methods used by NCES, results are only available at the district level and not at the school level. Comparisons were made between the eighteen participating districts—Atlanta, Austin, Baltimore, Boston, Charlotte, Chicago, Cleveland, Detroit, District of Columbia, Fresno, Houston, Jefferson County, Los Angeles, Miami-Dade County, Milwaukee, New York City, Philadelphia, and San Diego—as well as Texas, the nation, and large central cities (LCC). These results present the fourth administration of the mathematics assessment for the TUDA. Not all districts have had participants over that time but Houston is one of the original TUDA districts since its inception in 2003.

NAEP Results Overall Summary

- **In 2009, HISD showed remarkable overall performance in the subject of mathematics at both grades 4 and 8 (Tables 1- 2).**
- It is important to note that while the 18 TUDAs represent some of the largest urban school districts in the country, there remains some drastic differences among them. Not only are the demographic characteristics different but there is a drastic difference in percentage of students that are eligible for free/reduced price lunch and the percentage of English Language Learners.
- **Tables 4 and 5** show the key characteristics for each of the participating TUDAs at each of the grade levels, as well as the characteristics of the nation and the LCC.
- The most notable performance of HISD students at grade 4 and 8 is that overall and each student group had higher average scale scores than their peers in the large central cities.
- The only other TUDA districts to accomplish this achievement was Charlotte which has nearly half as many students qualifying for the free/reduced lunch program and very few English Language Learners (ELL) students.
- Another notable achievement for HISD is that each student group in grade 4 and 8 demonstrates higher average scores than similar student groups from the nation. This is to say, HISD White, Hispanic, and African American students outperformed their counterparts nationally.

NAEP Results for Mathematics

- **Houston's fourth-grade students' average scale score in math increased from 227 in 2003 to 236 in 2009. This was higher than the average score of 231 for public school students in large central cities (LCC) (Graph 8).**
- Houston's fourth-grade students outperformed the Large Central Cities and had higher scores than 10 districts, was not significantly different than 5 districts, and was only behind Austin and Charlotte (**Table 1**).
- The districts that outperformed HISD fourth-graders had lower percentages of students receiving free/reduced price lunch (**Tables 4 & 5**).
- The percent of Houston fourth-grade students who scored at or above the basic level increased from 70 percent in 2003 to 82 percent in 2009, while the percent at or above proficient increased from 18 percent in 2003 to 30 percent in 2009. Houston ranked third highest among the 18 districts in the percent at or above basic level of performance (**Table 1**).
- The average math score for Houston's Hispanic fourth-grade students increased from 226 in 2003 to 235 in 2009, exceeding the scores for the nation, Large Central Cities, and tied for the second highest score with Charlotte. Only Miami-Dade had a higher score than Houston's Hispanic fourth-graders. African American fourth-grade students in Houston increased from 221 in 2003 to 227 in 2009 and outperformed their counterparts in the nation, Large Central Cities, and ranked third among the TUDA districts, tying with New York City (**Graphs 4 & 5**).
- **Houston's eighth-grade students' average math scale score increased from 264 in 2003 to 277 in 2009. This was higher than the average score of 271 for public school students in large central cities in 2009 (Graph 20).**
- Houston's eighth-grade students outperformed the Large Central Cities and had higher scores than 12 districts, was not significantly different than 3 districts, and were only behind Austin and Charlotte. The districts, Austin and Charlotte, which outperformed

HISD eighth-graders, had lower percentages of students receiving free/reduced price lunch (**Tables 2 & 5**).

- The percent of Houston eighth-grade students who scored at or above the basic level increased from 52 percent in 2003 to 69 percent in 2009. Houston ranked third highest among the 18 cities in the percent at or above basic level of performance (**Table 2**).
- Hispanic eighth-grade students in Houston increased from 261 in 2003 to 275 in 2009. Additionally, Houston's Hispanic eighth-grade students outperformed their counterparts nationwide, in Large Central Cities, and all 18 TUDA districts. African American eighth-grade students in Houston increased from 259 in 2003 to 266 in 2009. African American eighth-grade students outperformed their counterparts nationwide, in Large Central Cities, and ranked fourth among the TUDA cities (**Graphs 16 - 23**).
- Overall, Houston's fourth-grade and eighth-grade student groups had higher average scores than large central cities. The only other district to do this was Charlotte (**Tables 1 & 2**).

NAEP GAP Results for Mathematics: (See Appendices)

- Houston's fourth-grade female students average scale score in math was not significantly different from that of male students.
- Hispanic fourth-grade students in Houston had an average scale score that was lower than that of their white counterparts by 25 points. The average scale score has decreased from 2007 and 2009 by 4 points between Hispanic students and white students, while the gap at the state level has increased by 3 points (**Graph 10**).
- In 2009, African American fourth-grade students had an average scale score that was 32 points lower than their white counterparts. The average scale score has decreased from 2007 and 2009 by 6 points between African American students and white students, while the gap at the state level has remained the same during that time period (**Graph 11**).
- The fourth-grade students in HISD eligible for free/reduced lunch had an average scale score of 233, which was lower than those students not eligible for free/reduced lunch by 18 points. The gap at the state level between the two groups was 2 points higher than HISD (**Graph 12**).
- The eighth-grade Hispanic students had an average scale score that was lower than their white counterparts by 36 points and decreased by 2 points from 2007. During this same time period, the gap increased by 1 point (**Graph 22**).
- The African American eighth-grade students in HISD had an average score that was lower than their white peers by 45 points. The average scale score difference is not significantly different between 2007 and 2009 for African American students and white students (**Graph 23**).
- Although some of the gaps between demographic groups are not significant the direction and increments are leading in a positive direction.

NAEP Sample/Exclusions: (Table 3)

- For 2009, 2,200 fourth-grade students were tested in math and 1,900 eighth-grade students were tested in math.
- The district's exclusion rate for fourth graders with disabilities (SD) or English language learners (ELL) on the mathematics test was 3 percent, lower than in 2007 (2 percent for ELL students).

- The math exclusion rate for eighth-grade students with disabilities or English language learners was 5 percent, lower than in 2007 (2 percent for LEP students).

TG

Attachments

- c: Superintendent's Direct Reports
Regional Superintendents
Jolene Yoakum

NAEP Mathematics Results: 2003, 2005, 2007, and 2009

Table 1: NAEP Fourth-Grade Mathematics Assessment Results by Scale Scores and Percentage of Students At or Above Basic and Proficient Levels: 2003, 2005, 2007, and 2009

	Scale Scores (0-500)				At or Above Basic (Percentage of Students)				At or Above Proficient (Percentage of Students)			
	<u>2003</u>	<u>2005</u>	<u>2007</u>	<u>2009</u>	<u>2003</u>	<u>2005</u>	<u>2007</u>	<u>2009</u>	<u>2003</u>	<u>2005</u>	<u>2007</u>	<u>2009</u>
Nation	234	237	239	239	76	79	81	81	31	35	39	38
Texas	237	242	242	240	82	87	87	85	33	40	40	38
Large Central City	224	228	230	231	63	68	70	72	20	24	28	29
Houston	227	233	234	236	70	77	80	82	18	26	28	30
Atlanta	216	221	224	225	50	57	61	63	13	17	20	21
Austin	+	242	217	240	+	85	83	83	+	40	40	38
Baltimore	+	+	+	222	+	+	+	64	+	+	+	13
Boston	220	229	233	236	59	72	77	81	12	22	27	31
Charlotte	242	244	244	245	84	86	85	86	41	44	44	45
Chicago	214	216	220	222	50	52	58	62	10	13	16	18
Cleveland	215	220	215	213	51	60	53	51	10	13	10	8
Detroit	+	+	+	200	+	+	+	31	+	+	+	3
District of Columbia	205	211	214	220	36	45	49	57	7	10	14	19
Fresno	+	+	+	219	+	+	+	58	+	+	+	14
Jefferson county	+	+	+	233	+	+	+	72	+	+	+	31
Los Angeles	216	220	221	222	52	58	60	61	13	18	19	19
Miami-Dade	+	+	+	236	+	+	+	81	+	+	+	33
Milwaukee	+	+	+	220	+	+	+	59	+	+	+	15
New York	226	231	236	237	67	73	79	79	21	26	34	35
Philadelphia	+	+	+	222	+	+	+	61	+	+	+	16
San Diego	226	232	234	236	66	74	74	77	20	29	35	36

+Did not participate

"Large Central City" includes nationally representative public schools located in large central cities (population 250,000 or more) within metropolitan statistical areas.

NAEP Mathematics Results: 2003, 2005, 2007, and 2009

Table 2: NAEP Eighth-Grade Mathematics Assessment Results by Scale Scores and Percentage of Students At or Above Basic and Proficient Levels: 2003, 2005, 2007, and 2009

	Scale Scores (0-500)				At or Above Basic (Percentage of Students)				At or Above Proficient (Percentage of Students)			
	<u>2003</u>	<u>2005</u>	<u>2007</u>	<u>2009</u>	<u>2003</u>	<u>2005</u>	<u>2007</u>	<u>2009</u>	<u>2003</u>	<u>2005</u>	<u>2007</u>	<u>2009</u>
Nation	276	278	280	282	67	68	70	71	27	28	31	33
Texas	277	281	286	287	69	72	78	78	25	31	35	36
Large Central City	262	265	269	271	50	53	57	60	16	19	22	24
Houston	264	267	273	277	52	58	65	69	12	16	21	24
Atlanta	244	245	256	259	30	31	41	46	6	7	11	11
Austin	+	281	283	287	+	68	72	75	+	33	34	39
Baltimore	+	+	+	257	+	+	+	43	+	+	+	10
Boston	262	270	276	279	48	58	65	67	17	23	27	31
Charlotte	279	281	283	283	67	69	70	72	32	33	34	33
Chicago	254	258	260	264	42	45	49	51	9	11	13	15
Cleveland	253	249	257	256	38	34	45	42	6	6	7	8
Detroit	+	+	+	238	+	+	+	23	+	+	+	4
District of Columbia	243	245	248	251	29	31	34	38	6	7	8	12
Fresno	+	+	+	258	+	+	+	46	+	+	+	15
Jefferson county	+	+	+	271	+	+	+	60	+	+	+	22
Los Angeles	245	250	257	258	32	38	45	46	7	11	14	13
Miami-Dade	+	+	+	273	+	+	+	64	+	+	+	22
Milwaukee	+	+	+	251	+	+	+	37	+	+	+	7
New York	266	267	270	273	54	54	57	60	20	20	22	26
Philadelphia	+	+	+	265	+	+	+	52	+	+	+	17
San Diego	264	270	272	280	53	61	62	68	18	22	24	32

+Did not participate

"Large Central City" includes nationally representative public schools located in large central cities (population 250,000 or more) within metropolitan statistical areas.

NAEP Sample/Exclusions: 2003, 2005, 2007, 2009

Table 3: Percentage of Identified and Excluded Students with Disabilities (SD) and English Language Learners (ELL) for HISD: 2003, 2005, 2007, 2009 Mathematics Assessments

	Mathematics							
	<u>2003</u>	<u>Grade 4</u>			<u>Grade 8</u>			
		<u>2005</u>	<u>2007</u>	<u>2009</u>	<u>2003</u>	<u>2005</u>	<u>2007</u>	<u>2009</u>
TUDA Sample	2,303	2,000	2,800	2,200	1,684	1,700	1,900	1,900
SD/ELL Identified	45%	46%	45%	43%	26%	24%	22%	22%
SD/ ELL Excluded	8%	7%	4%	3%	8%	6%	6%	5%
SD Identified	18%	12%	10%	7%	16%	11%	13%	12%
SD Excluded	7%	5%	3%	2%	7%	4%	5%	5%
ELL Identified	35%	37%	38%	38%	16%	15%	12%	12%
ELL Excluded	4%	4%	2%	2%	5%	3%	2%	2%

Table 4: Selected Characteristics of Fourth-Grade Public School Students in NAEP Mathematics, by Jurisdiction: 2009

Student Characteristics	# of Students Assessed	% White	% Black	% Hispanic	% Asian / Pacific Islander	% Eligible for Lunch Program	% with Disabilities	% English Language Learners
Nation	163,000	54	16	22	5	48	12	10
Large Central City	37,800	20	29	42	7	71	11	20
Houston	2,200	7	25	64	4	83	5	37
Atlanta	1,200	13	79	5	1	74	9	2
Austin	1,500	25	11	60	3	65	12	31
Baltimore	1,100	8	87	3	1	84	9	2
Boston	1,100	14	39	37	8	78	18	17
Charlotte	1,500	36	39	16	5	47	11	7
Chicago	1,900	9	45	42	4	87	12	10
Cleveland	900	15	68	13	1	100	11	6
Detroit	900	3	84	11	1	81	12	6
District of Columbia	1,300	9	77	12	2	72	11	7
Fresno	1,400	14	10	63	12	89	8	30
Jefferson County	1,400	53	36	5	3	60	13	2
Los Angeles	2,200	9	7	77	7	84	10	41
Miami-Dade	2,200	10	25	62	1	68	11	8
Milwaukee	1,300	13	56	22	5	78	14	11
New York	2,200	15	28	40	16	87	18	15
Philadelphia	1,300	12	61	19	6	87	12	8
San Diego	1,300	27	12	43	17	61	10	35

Rounds to Zero

Table 5: Selected Characteristics of Eighth-Grade Public School Students in NAEP Mathematics, by Jurisdiction: 2009

Student Characteristics	# of Students Assessed	% White	% Black	% Hispanic	% Asian / Pacific Islander	% Eligible for Lunch Program	% with Disabilities	% English Language Learners
Nation	156,200	56	16	21	5	43	10	6
Large Central City	34,600	21	27	42	8	66	11	12
Houston	1,900	8	29	60	3	78	8	10
Atlanta	900	7	88	4	*	78	10	1
Austin	1,300	31	11	55	3	55	11	15
Baltimore	900	6	91	2	1	82	8	1
Boston	1,100	14	40	33	11	73	16	8
Charlotte	1,300	32	46	15	4	46	9	6
Chicago	1,800	9	48	40	3	86	14	5
Cleveland	900	15	71	12	1	100	13	6
Detroit	1,000	2	89	8	1	70	13	6
District of Columbia	900	5	82	11	2	75	13	5
Fresno	1,300	14	11	58	16	86	9	21
Jefferson County	1,400	55	36	4	3	55	9	2
Los Angeles	2,000	8	10	75	7	82	10	23
Miami-Dade	2,000	10	22	65	1	63	11	7
Milwaukee	1,000	11	62	20	4	78	18	6
New York	2,100	16	32	39	14	79	14	9
Philadelphia	1,200	16	57	18	8	85	12	6
San Diego	1,000	28	12	41	18	55	8	15

Rounds to Zero

Appendix A
Grade 4 Mathematics



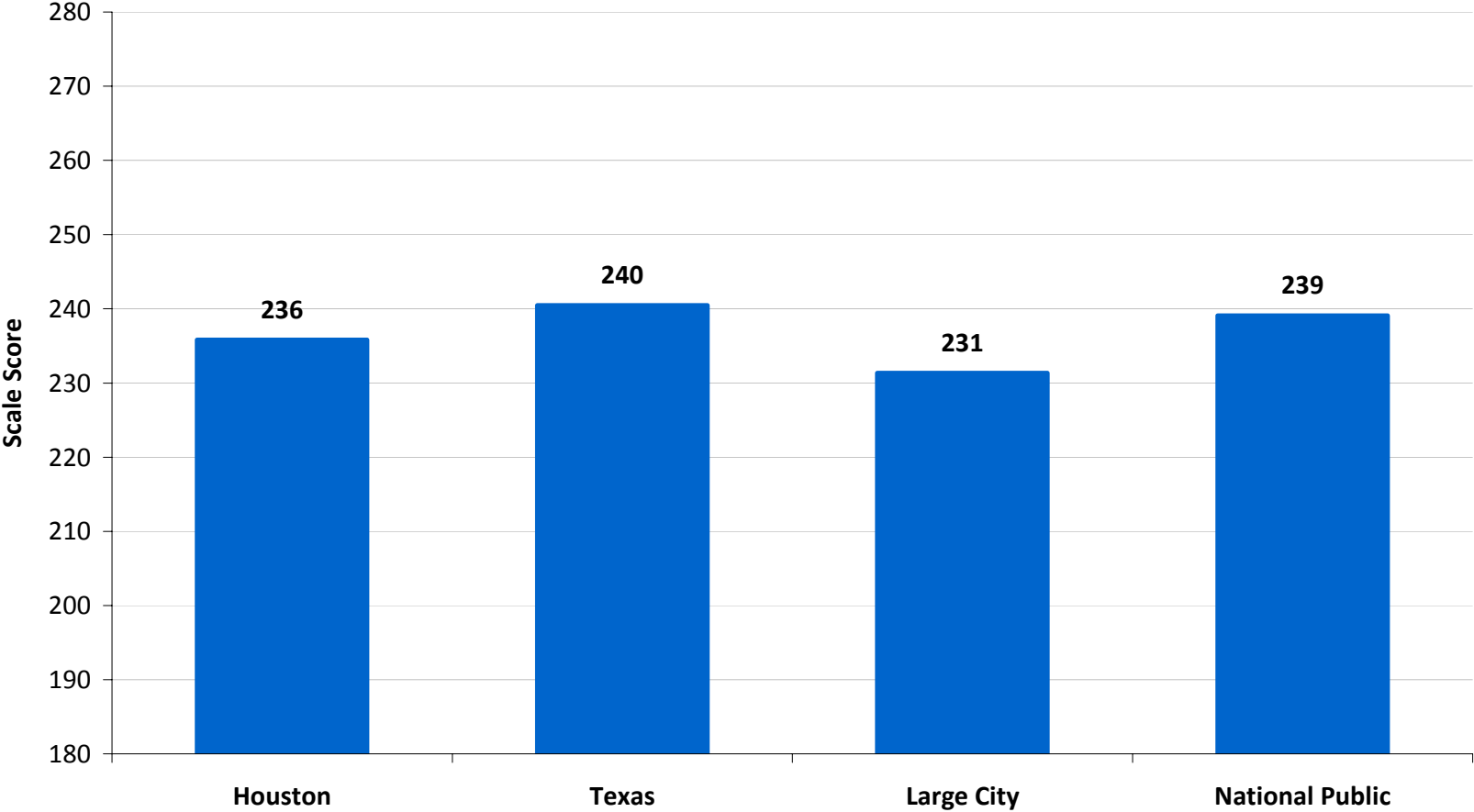
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Graph 1

NAEP Mathematics Grade 4 — Overall
Average Scale Score: 2009

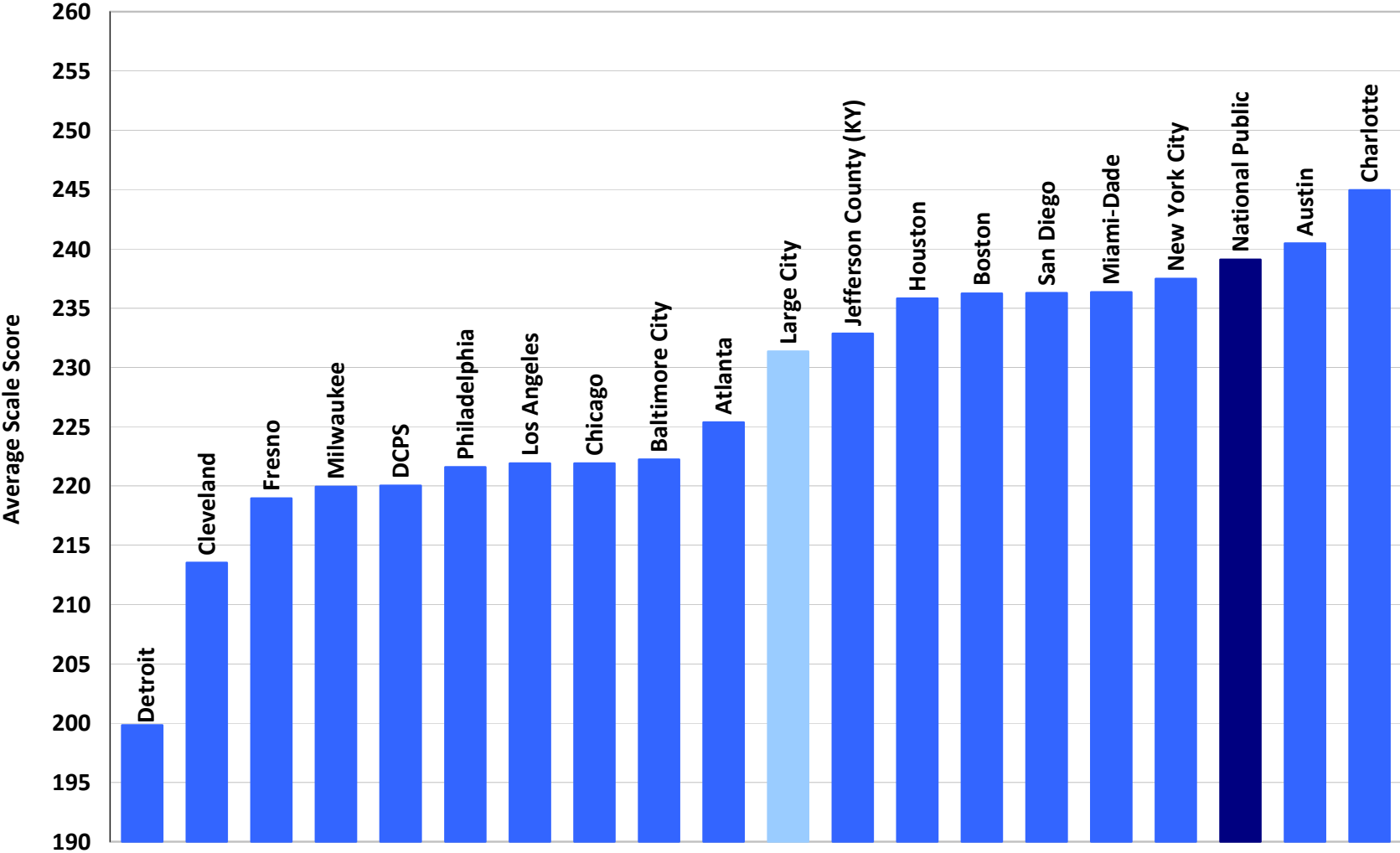


NOTE: The NAEP Mathematics scale ranges from 0 to 500. Observed differences are not necessarily statistically significant.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP).

Graph 2

NAEP Mathematics Grade 4 – Overall

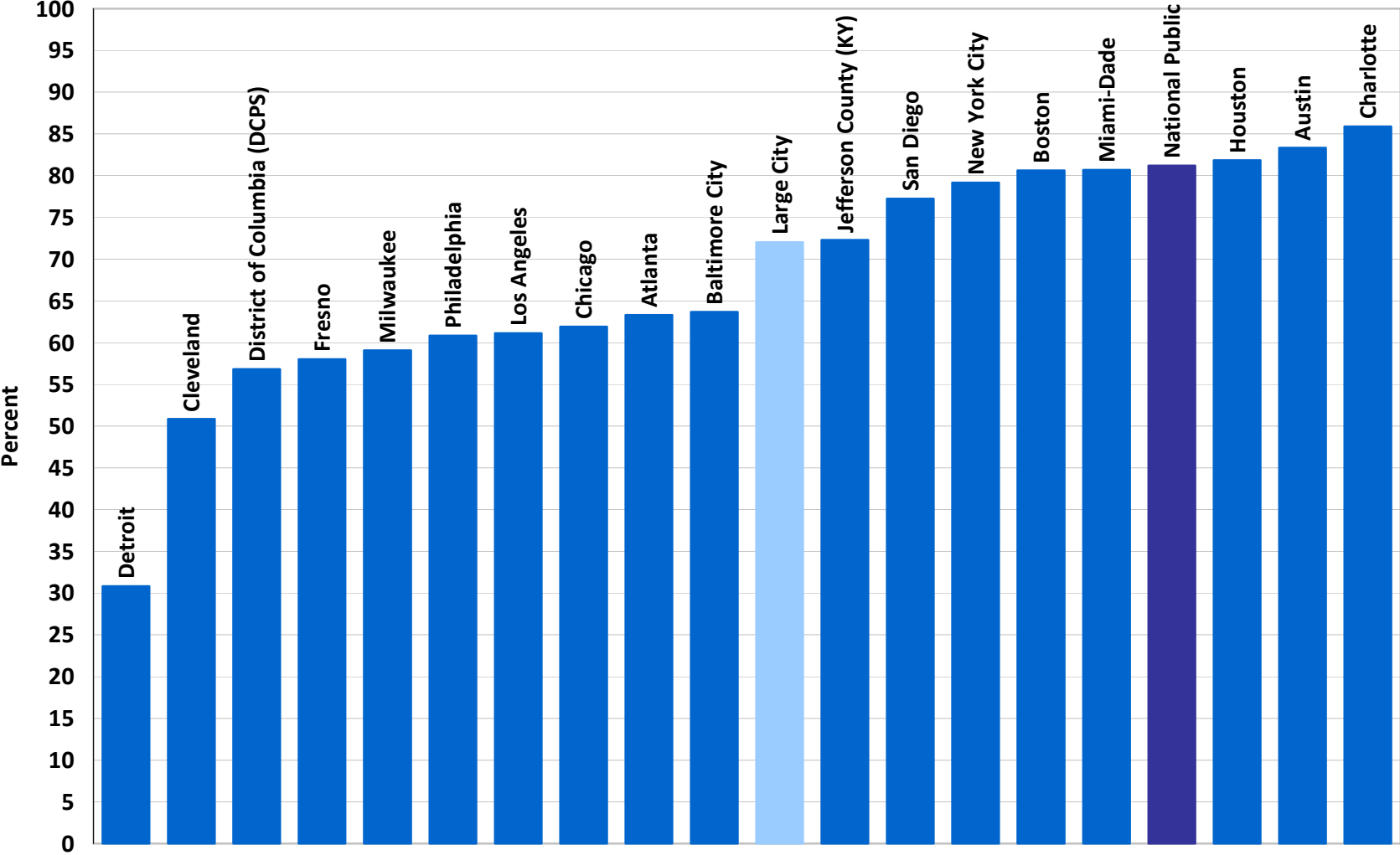
Average Scale Score: 2009



Graph 3

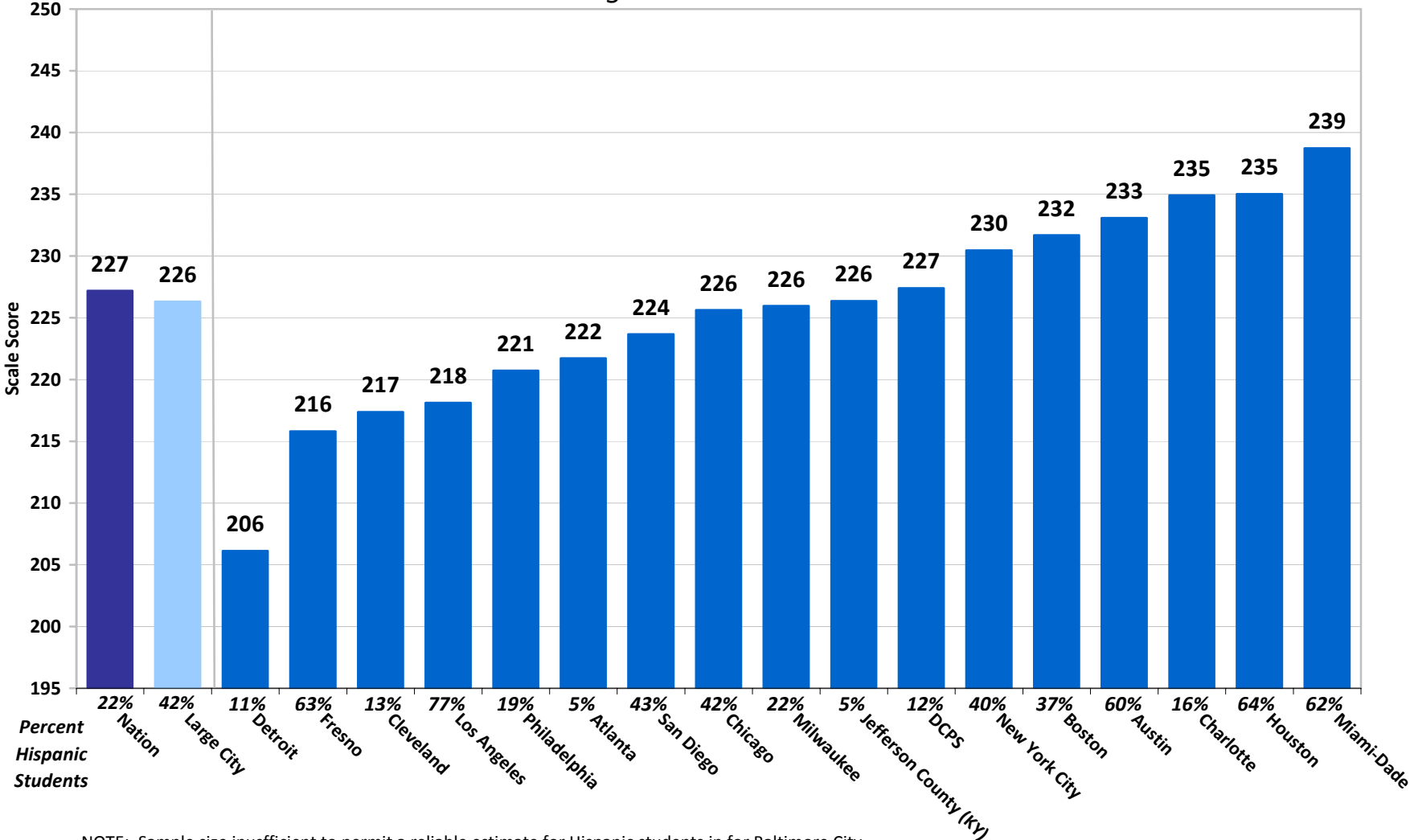
NAEP Mathematics Grade 4 – Overall

Percent At or Above Basic: 2009



Graph 4

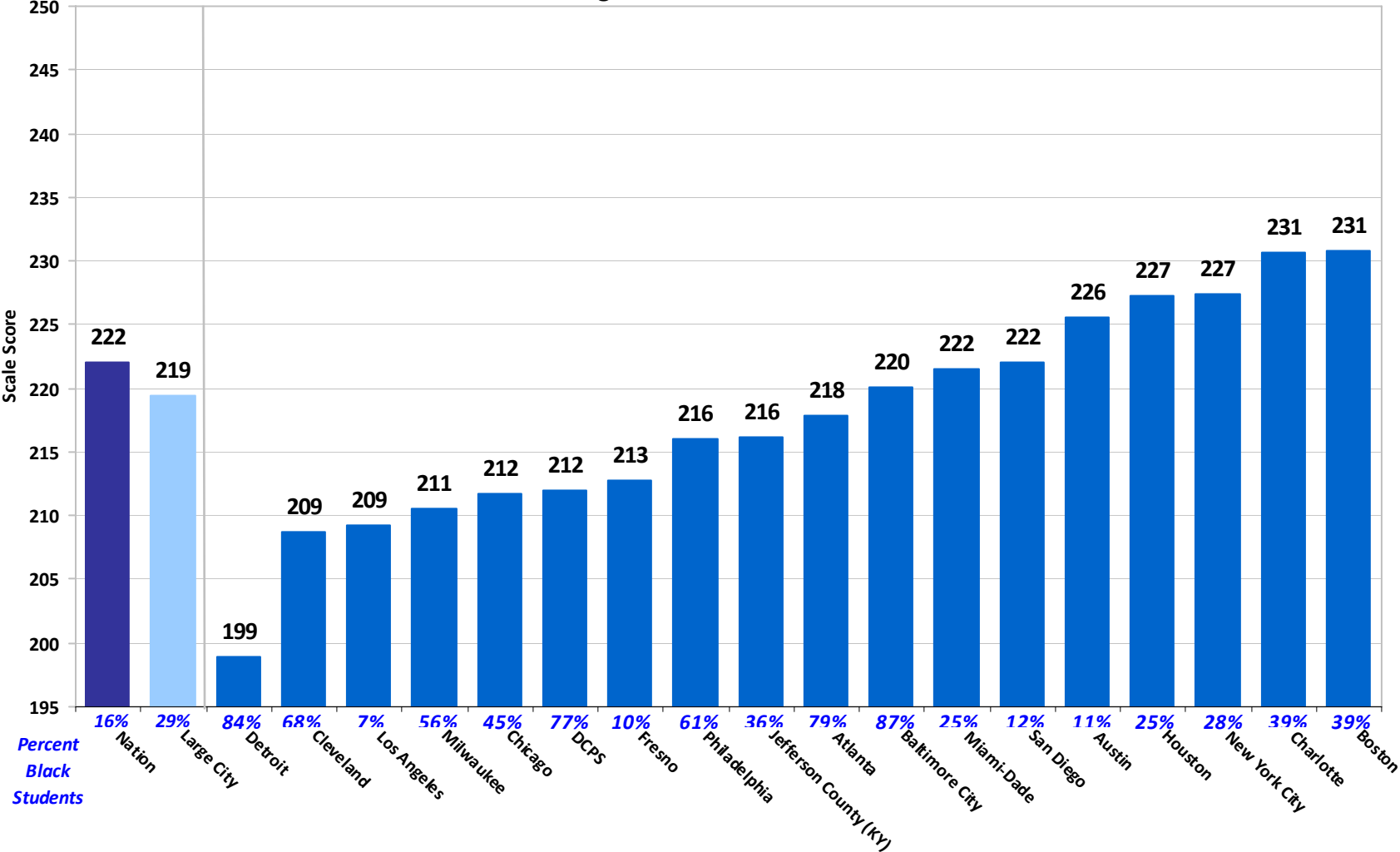
NAEP Mathematics Grade 4 — Hispanic Average Scale Score: 2009



NOTE: Sample size insufficient to permit a reliable estimate for Hispanic students in for Baltimore City.

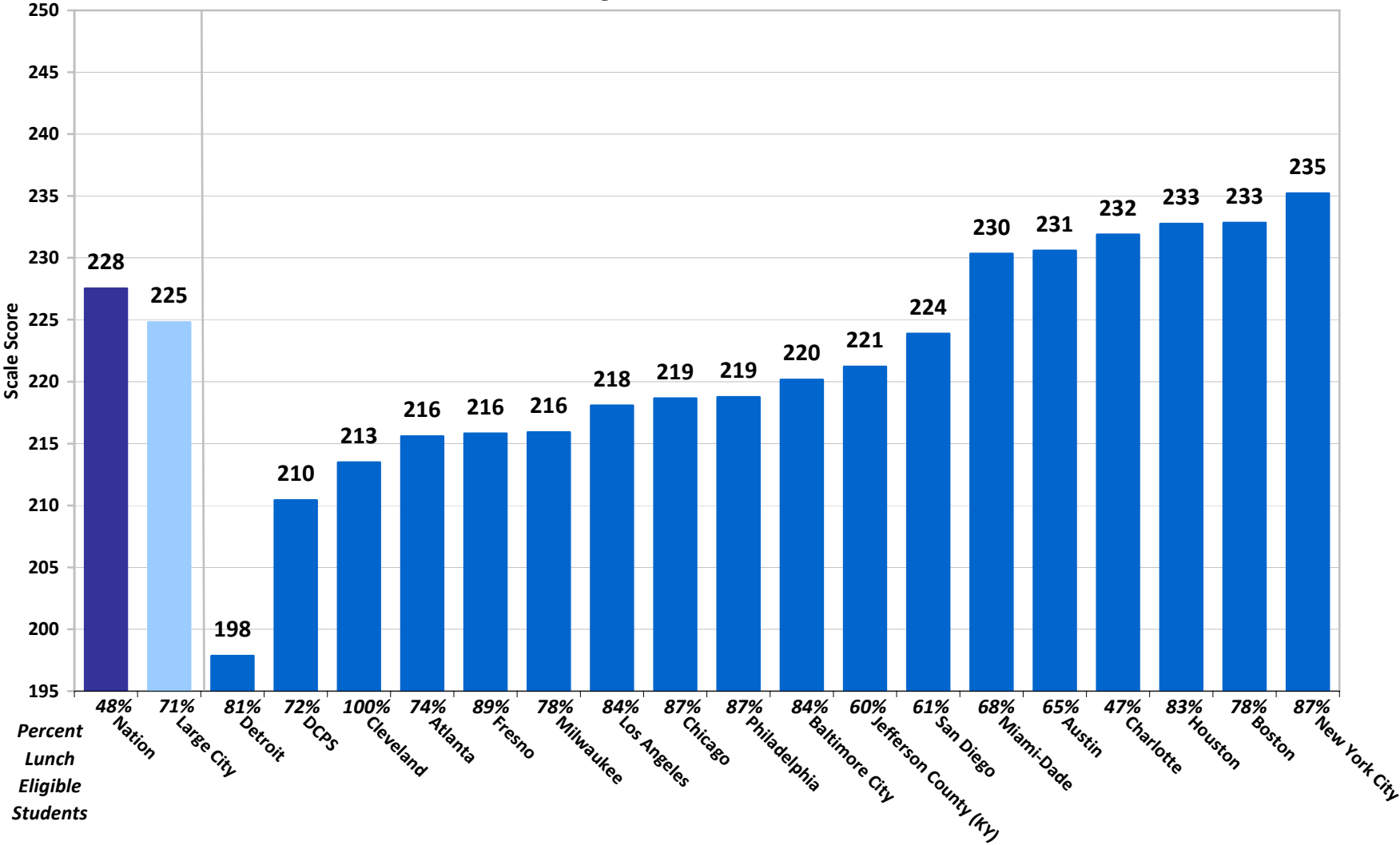
Graph 5

NAEP Mathematics Grade 4 — Black
Average Scale Score: 2009



Graph 6

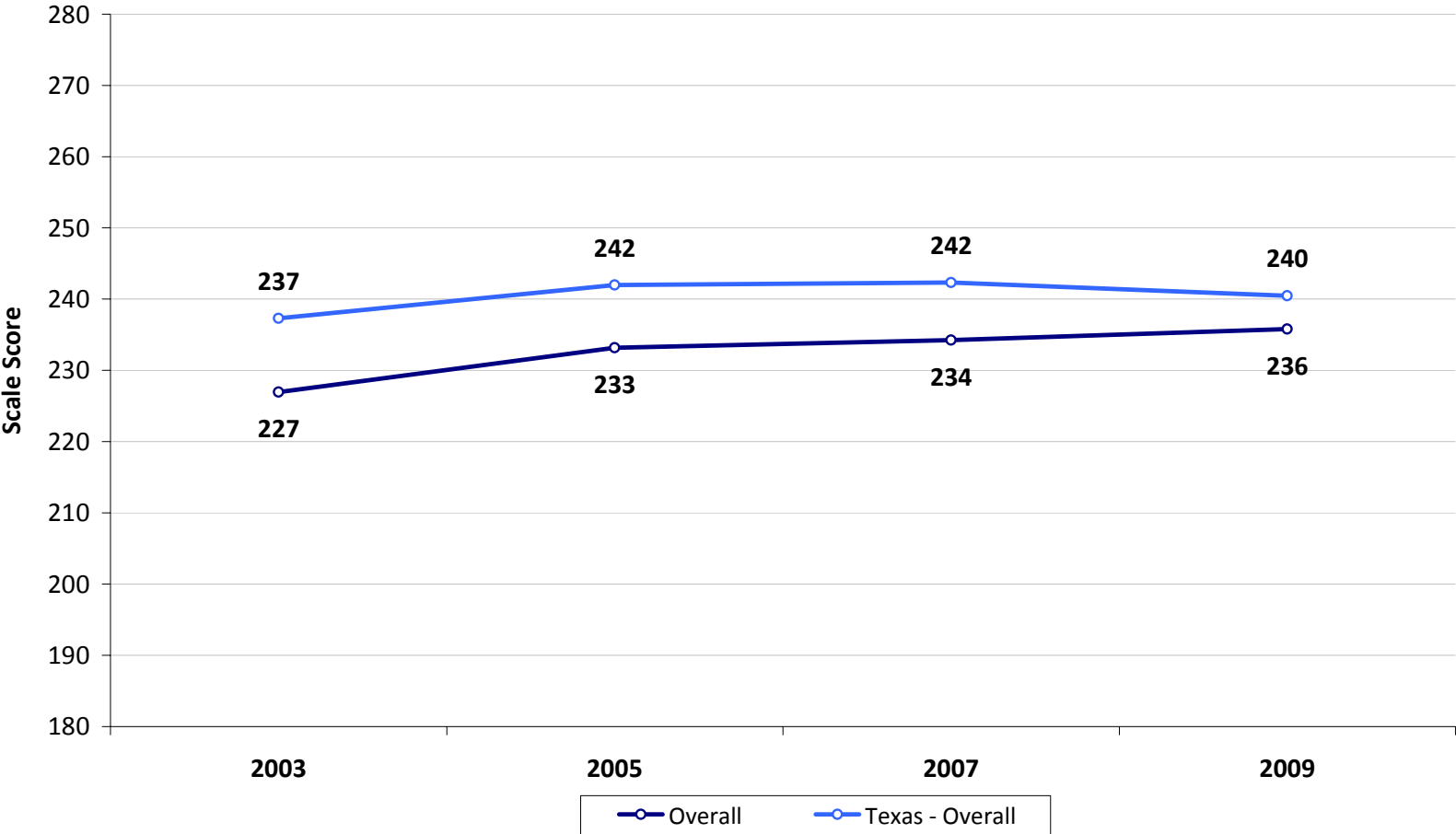
NAEP Mathematics Grade 4 — National School Lunch Program Average Scale Score: 2009



Graph 7

NAEP Mathematics Grade 4 — Overall

Average Scale Score: 2003-2009



NOTE: The NAEP Mathematics scale ranges from 0 to 500. Observed differences are not necessarily statistically significant.

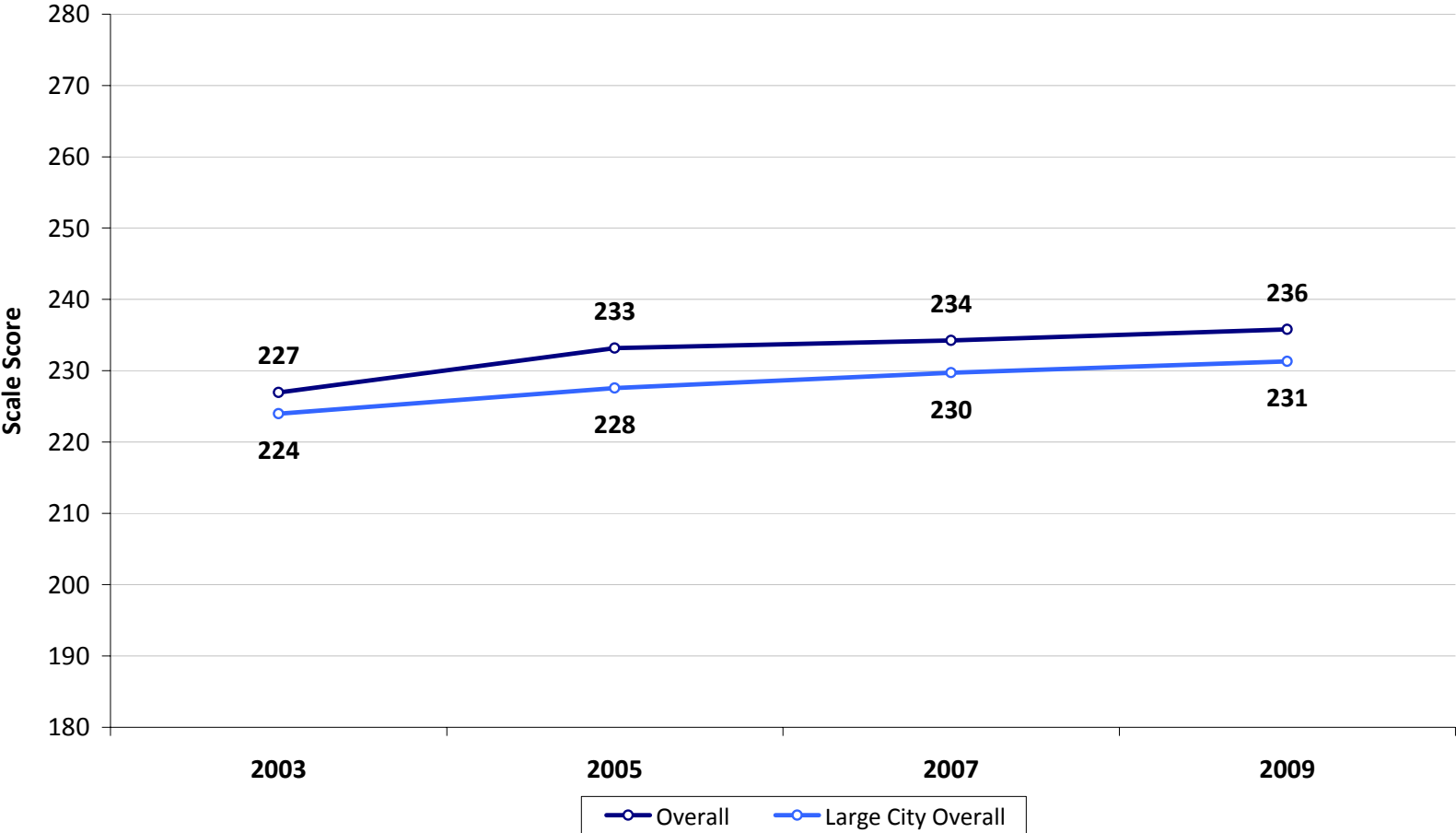
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP).

NOTE: Overall represents HISD.

Graph 8

NAEP Mathematics Grade 4 — Overall

Average Scale Score: 2003-2009



NOTE: The NAEP Mathematics scale ranges from 0 to 500. Observed differences are not necessarily statistically significant.

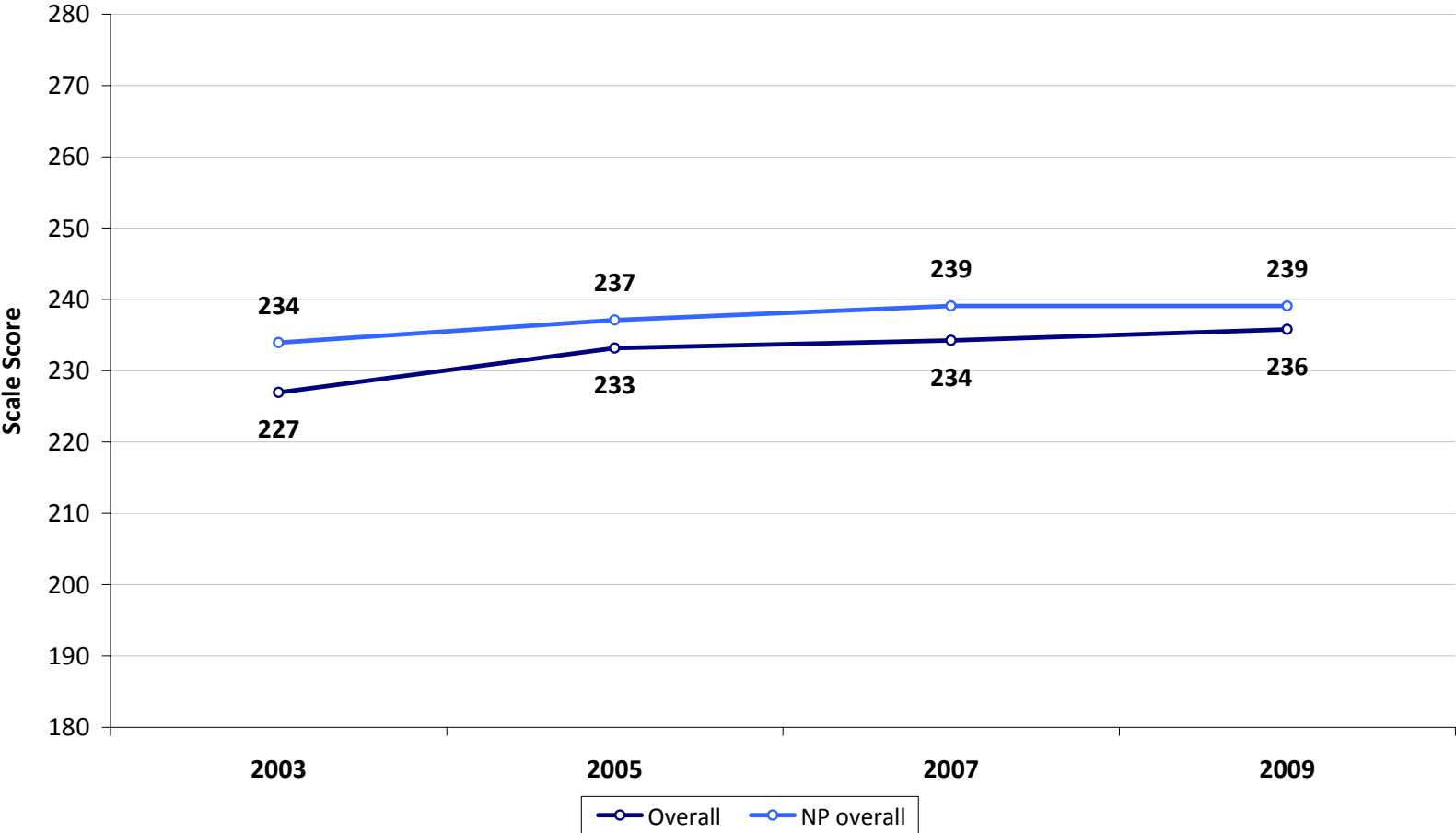
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP).

NOTE: Overall represents HISD.

Graph 9

NAEP Mathematics Grade 4 — Overall

Average Scale Score: 2003-2009



NOTE: The NAEP Mathematics scale ranges from 0 to 500. Observed differences are not necessarily statistically significant.

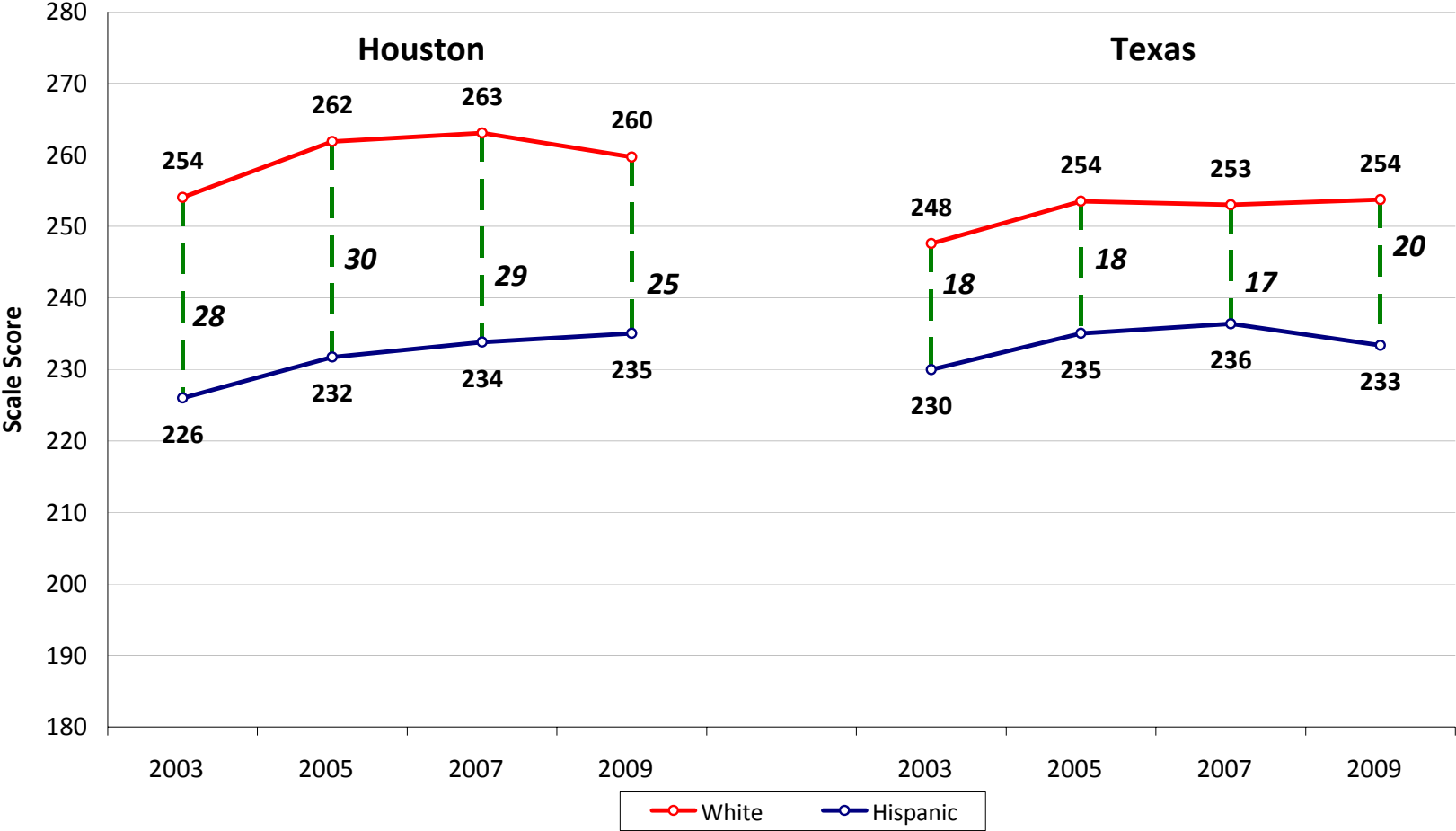
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP).

NOTE: Overall represents HISD.

NOTE: NP represents National Public.

Graph 10

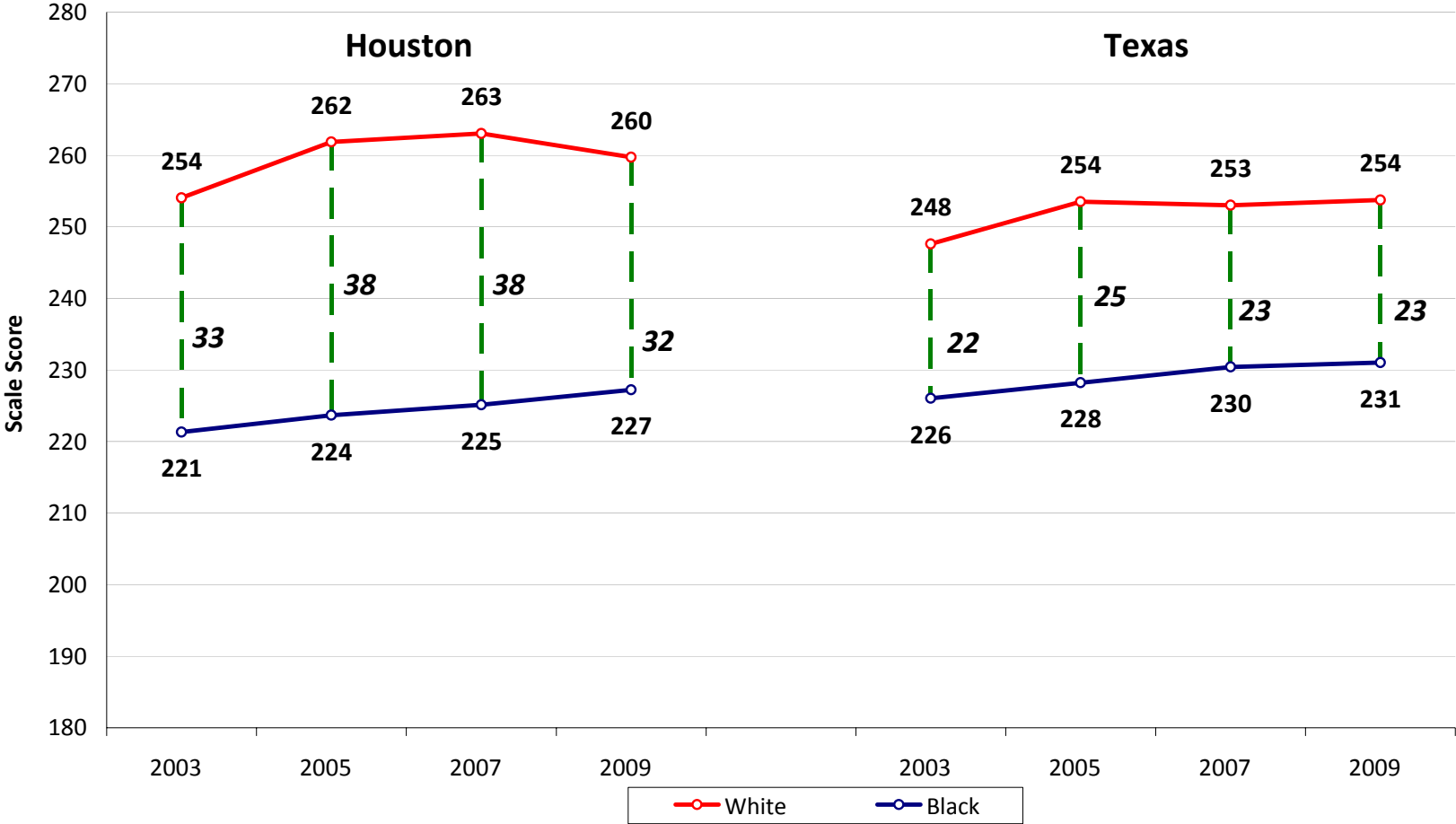
NAEP Mathematics Grade 4 — White - Hispanic Gap - Average Scale Score: 2003-2009



NOTE: The NAEP Mathematics scale ranges from 0 to 500. Observed differences are not necessarily statistically significant.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP).

Graph 11

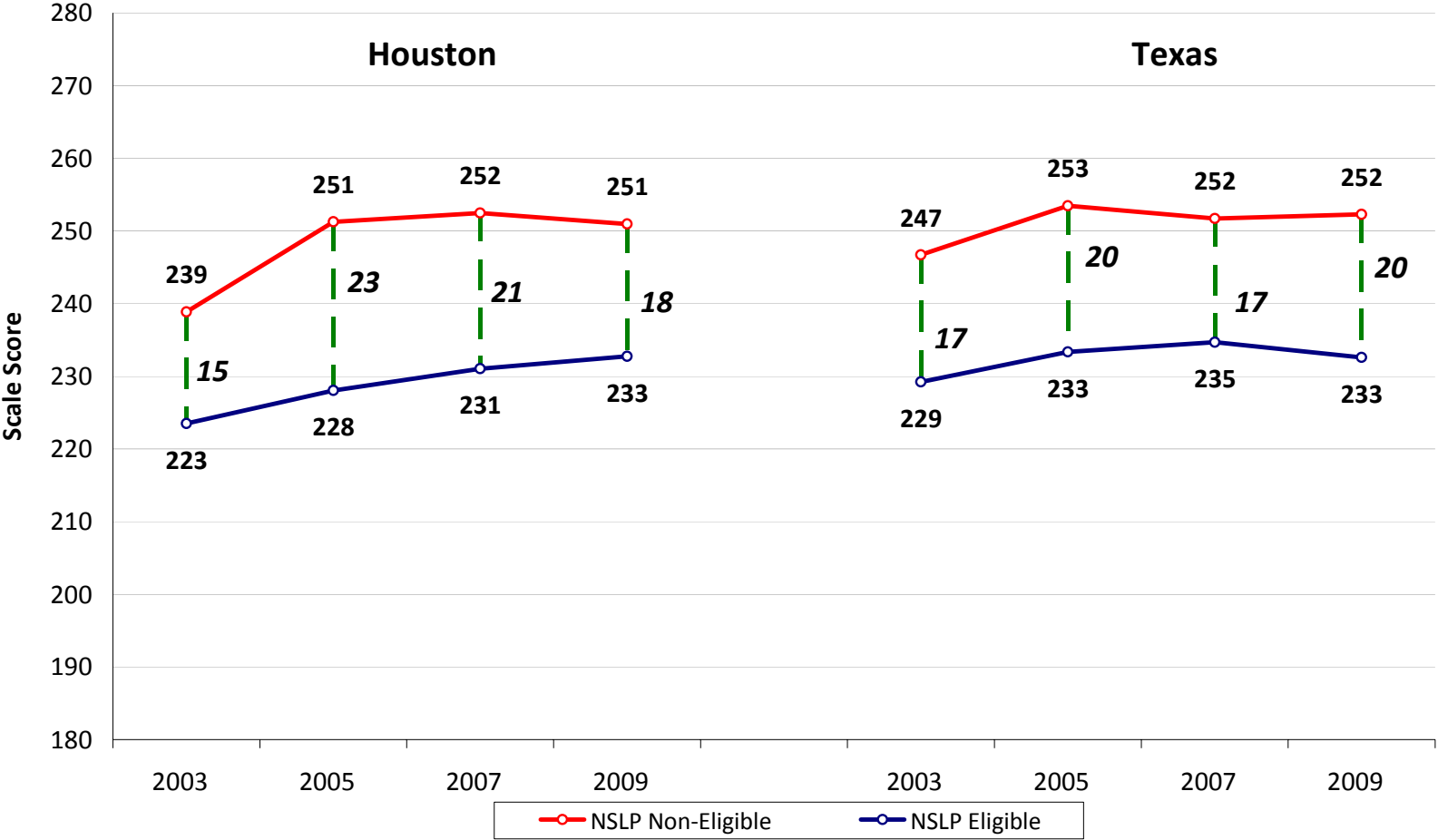
NAEP Mathematics Grade 4 — White - Black Gap - Average Scale Score: 2003-2009



NOTE: The NAEP Mathematics scale ranges from 0 to 500. Observed differences are not necessarily statistically significant.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP).

Graph 12

NAEP Mathematics Grade 4 – National School Lunch Program Gap - Average Scale Score: 2003-2009



NOTE: The NAEP Mathematics scale ranges from 0 to 500. Observed differences are not necessarily statistically significant.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP).

Appendix B
Grade 8 Mathematics



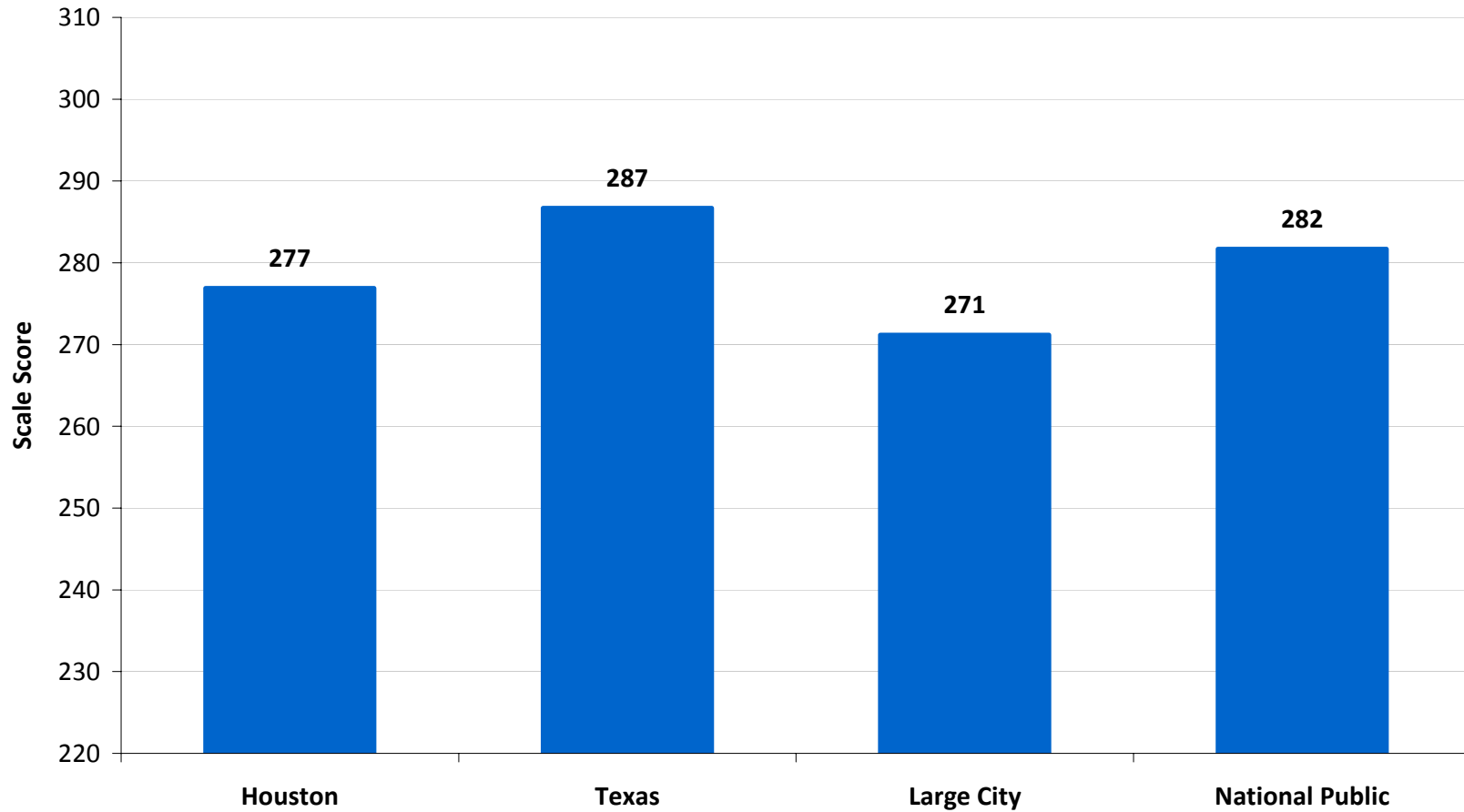
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Graph 13

NAEP Mathematics Grade 8 — Overall
Average Scale Score: 2009



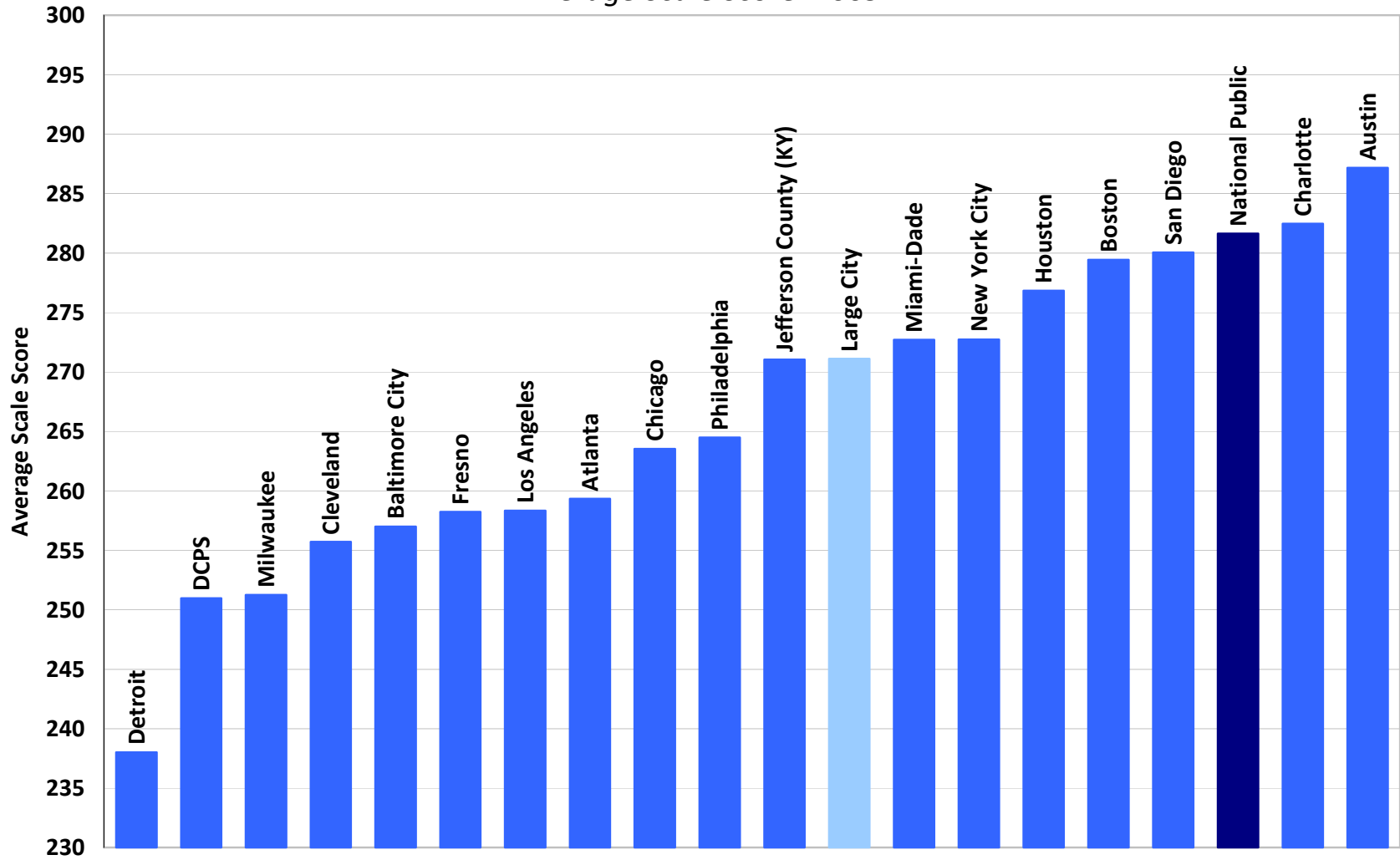
NOTE: The NAEP Mathematics scale ranges from 0 to 500. Observed differences are not necessarily statistically significant.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP).

Graph 14

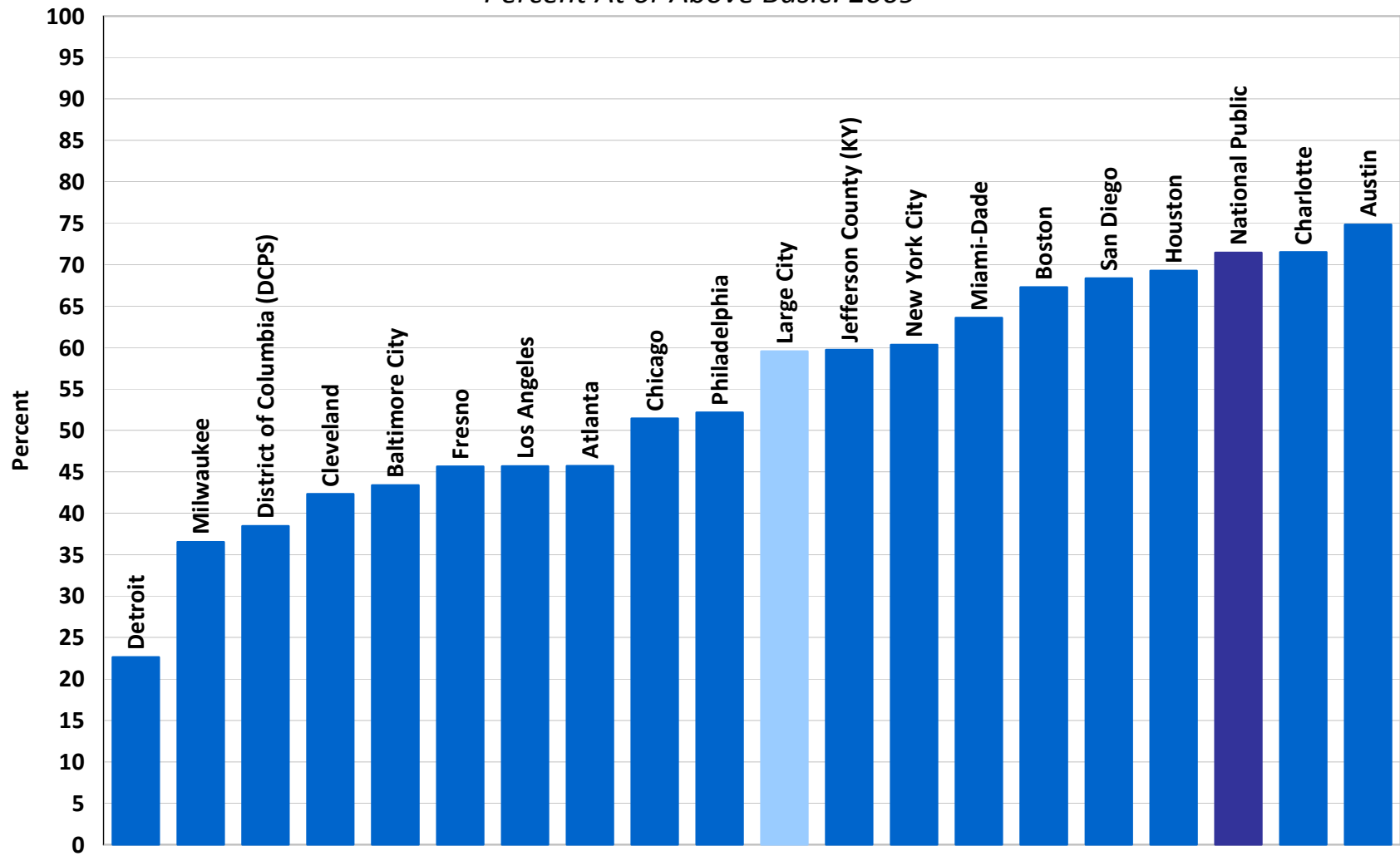
NAEP Mathematics Grade 8 – Overall

Average Scale Score: 2009



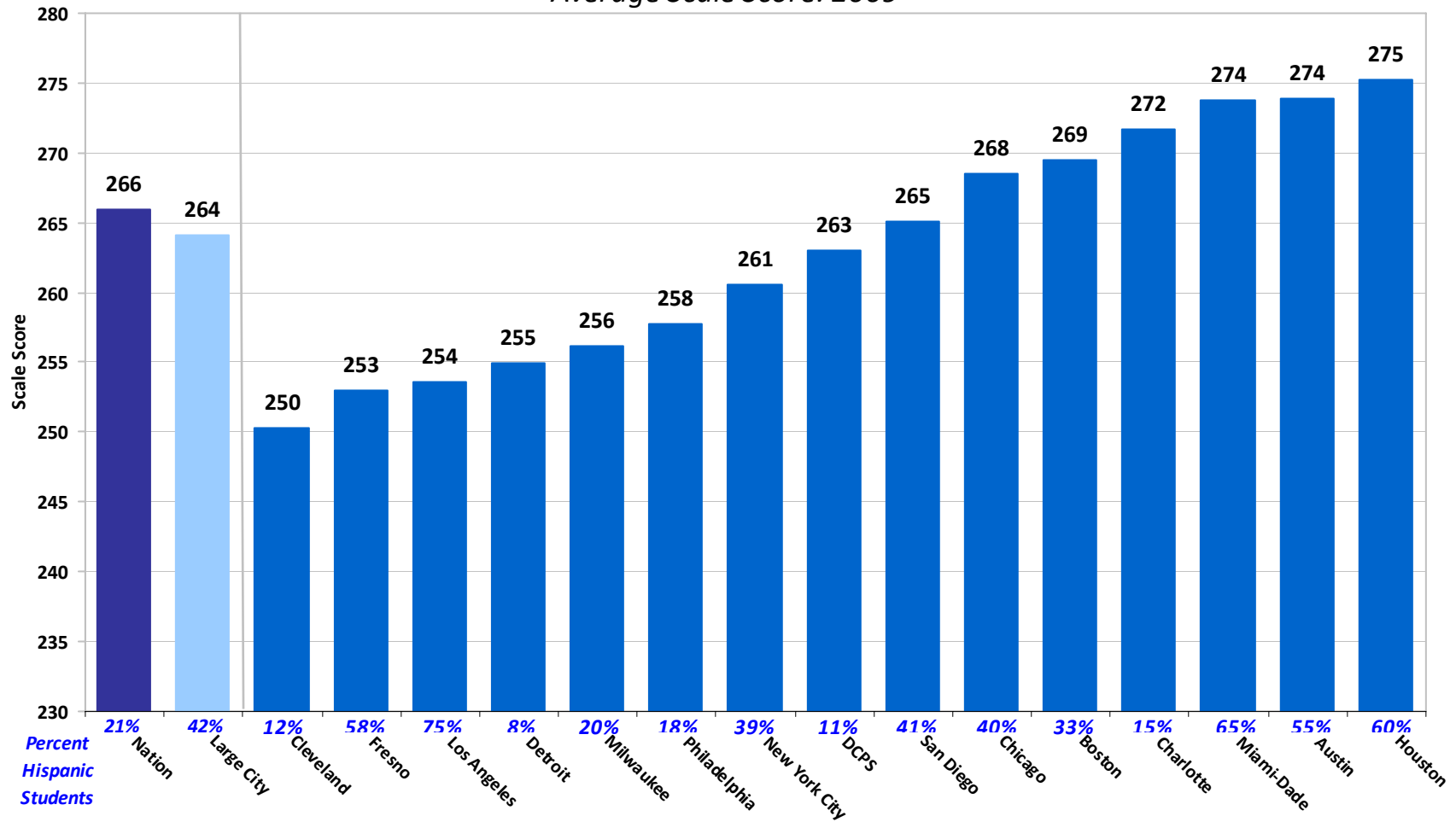
Graph 15

NAEP Mathematics Grade 8 — Overall
Percent At or Above Basic: 2009



Graph 16

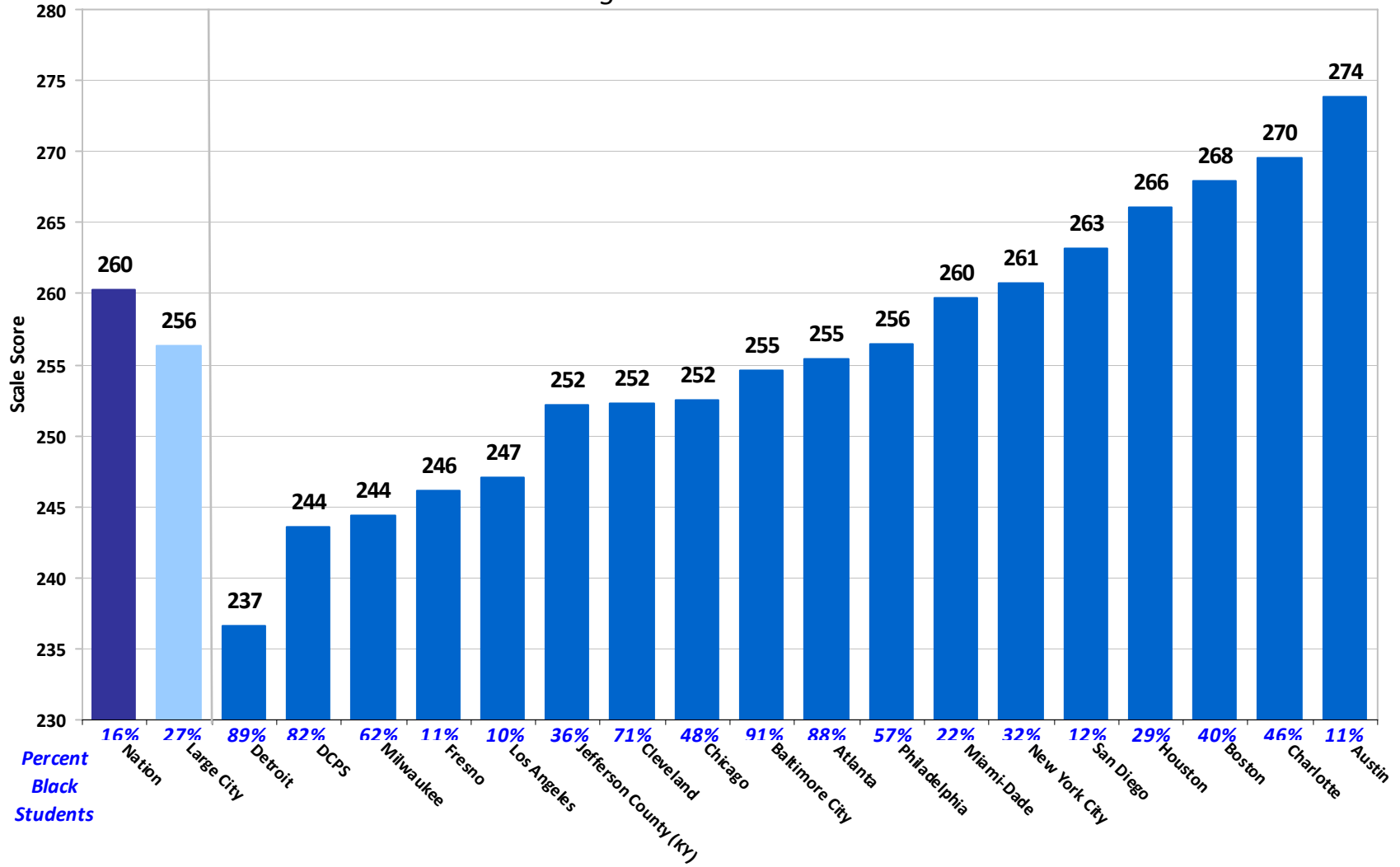
NAEP Mathematics Grade 8 — Hispanic
Average Scale Score: 2009



NOTE: Sample size insufficient to permit a reliable estimate for Hispanic students in for Atlanta, Baltimore City and Jefferson

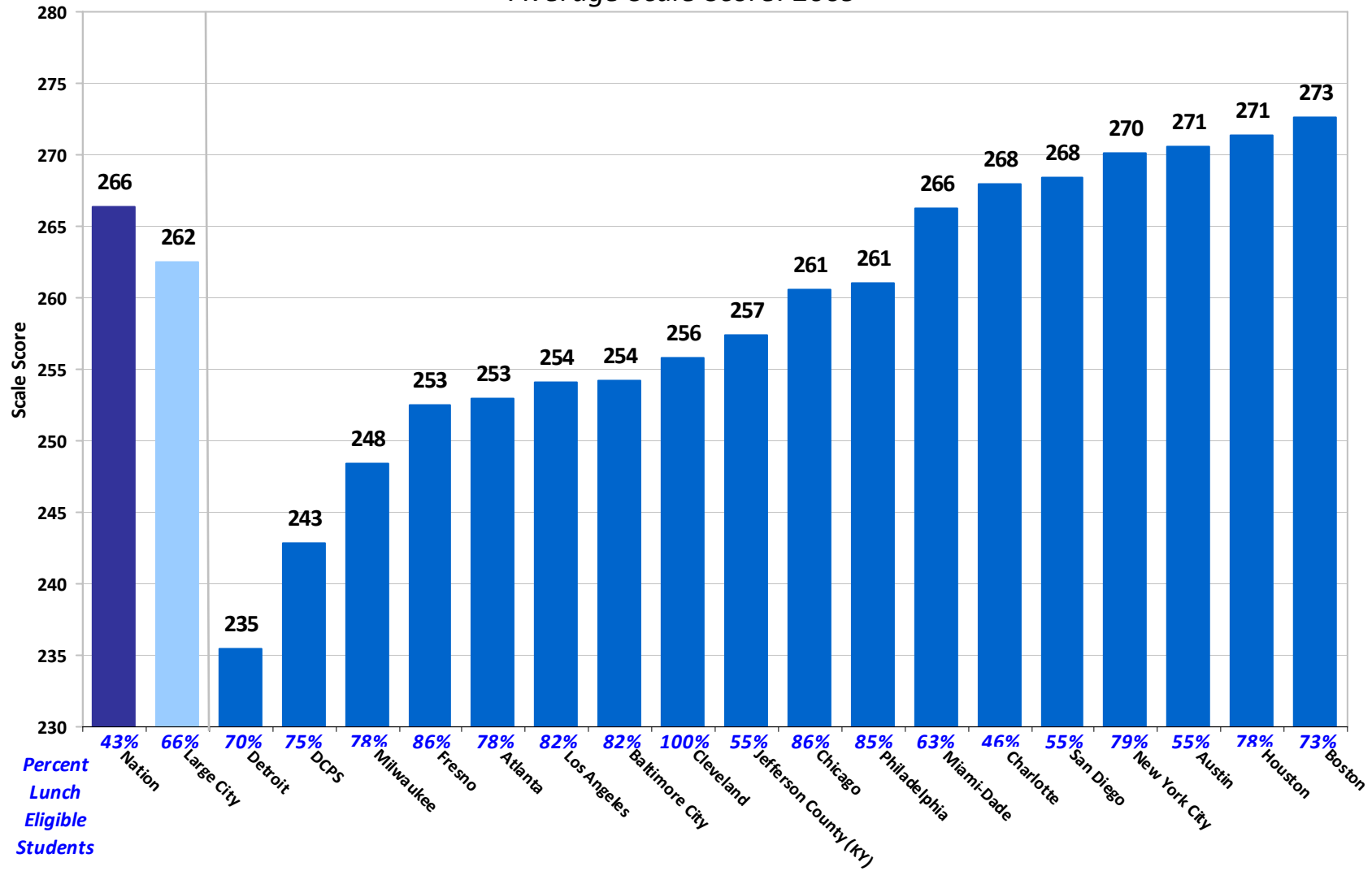
Graph 17

NAEP Mathematics Grade 8 — Black Average Scale Score: 2009



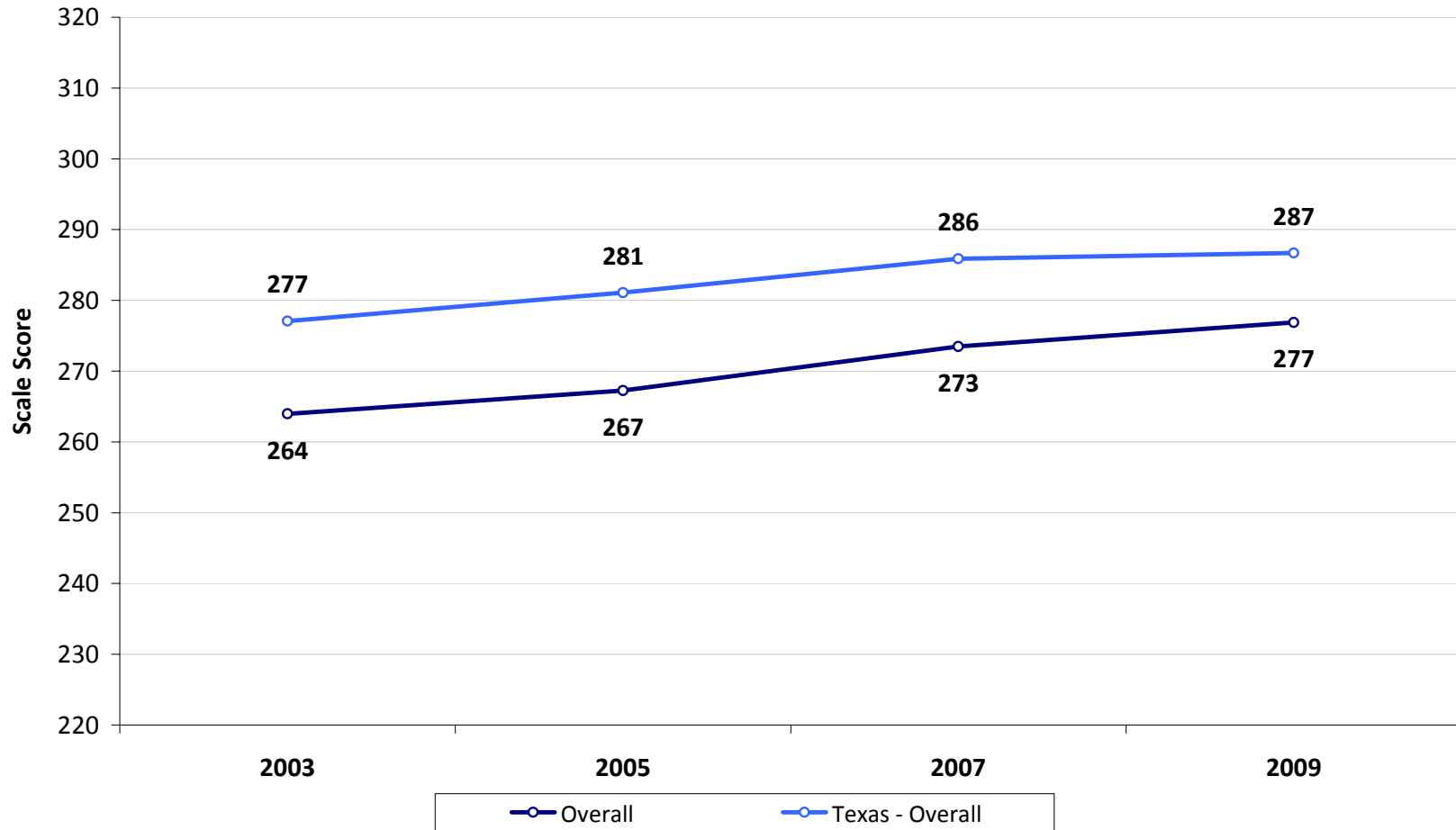
Graph 18

NAEP Mathematics Grade 8 — National School Lunch Program Average Scale Score: 2009



Graph 19

NAEP Mathematics Grade 8 — Overall *Average Scale Score: 2003-2009*



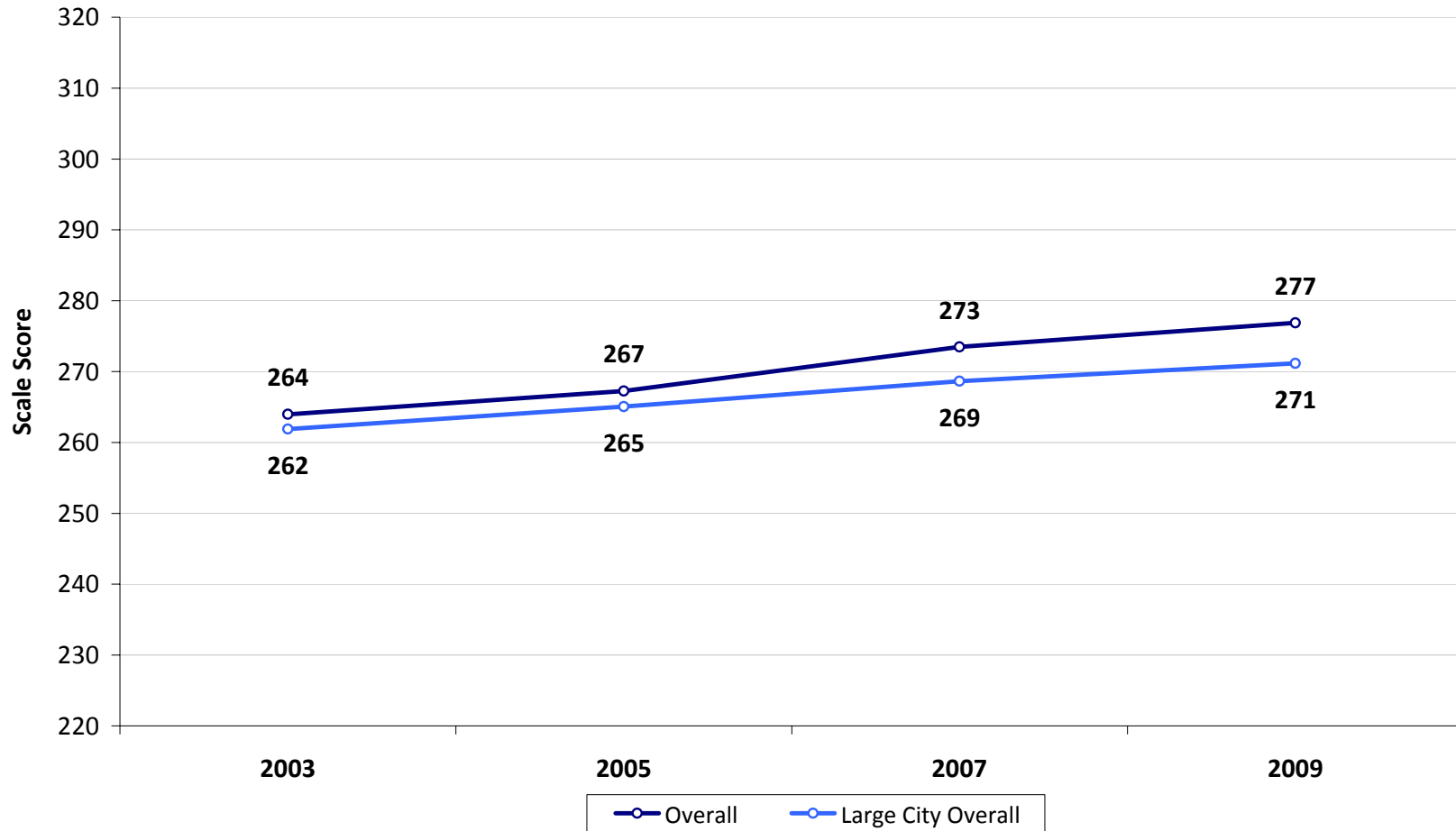
NOTE: The NAEP Mathematics scale ranges from 0 to 500. Observed differences are not necessarily statistically significant.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP).

NOTE: Overall represents HISD.

Graph 20

NAEP Mathematics Grade 8 — Overall *Average Scale Score: 2003-2009*



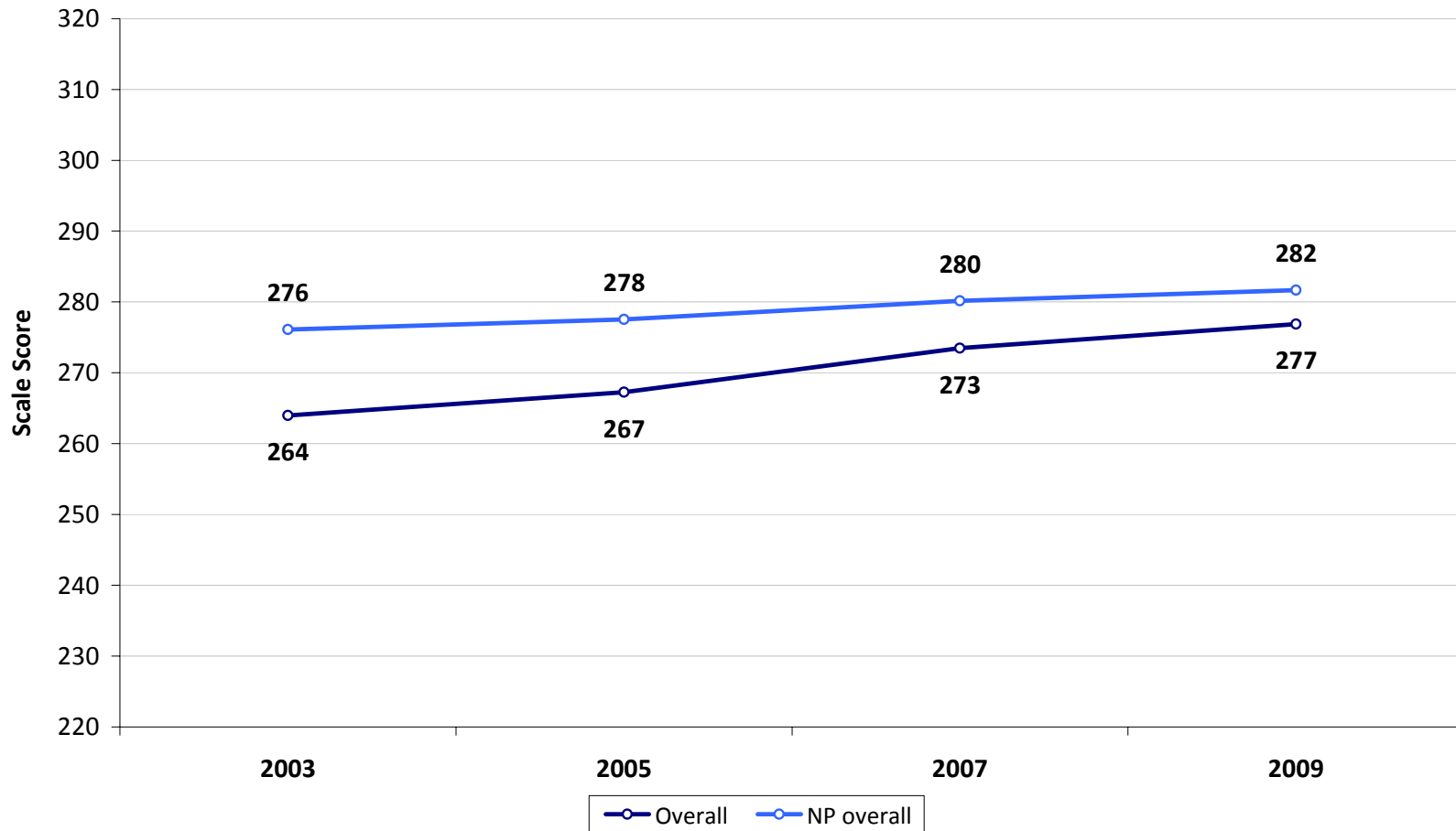
NOTE: The NAEP Mathematics scale ranges from 0 to 500. Observed differences are not necessarily statistically significant.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP).

NOTE: Overall represents HISD.

Graph 21

NAEP Mathematics Grade 8 — Overall
Average Scale Score: 2003-2009



NOTE: The NAEP Mathematics scale ranges from 0 to 500. Observed differences are not necessarily statistically significant.

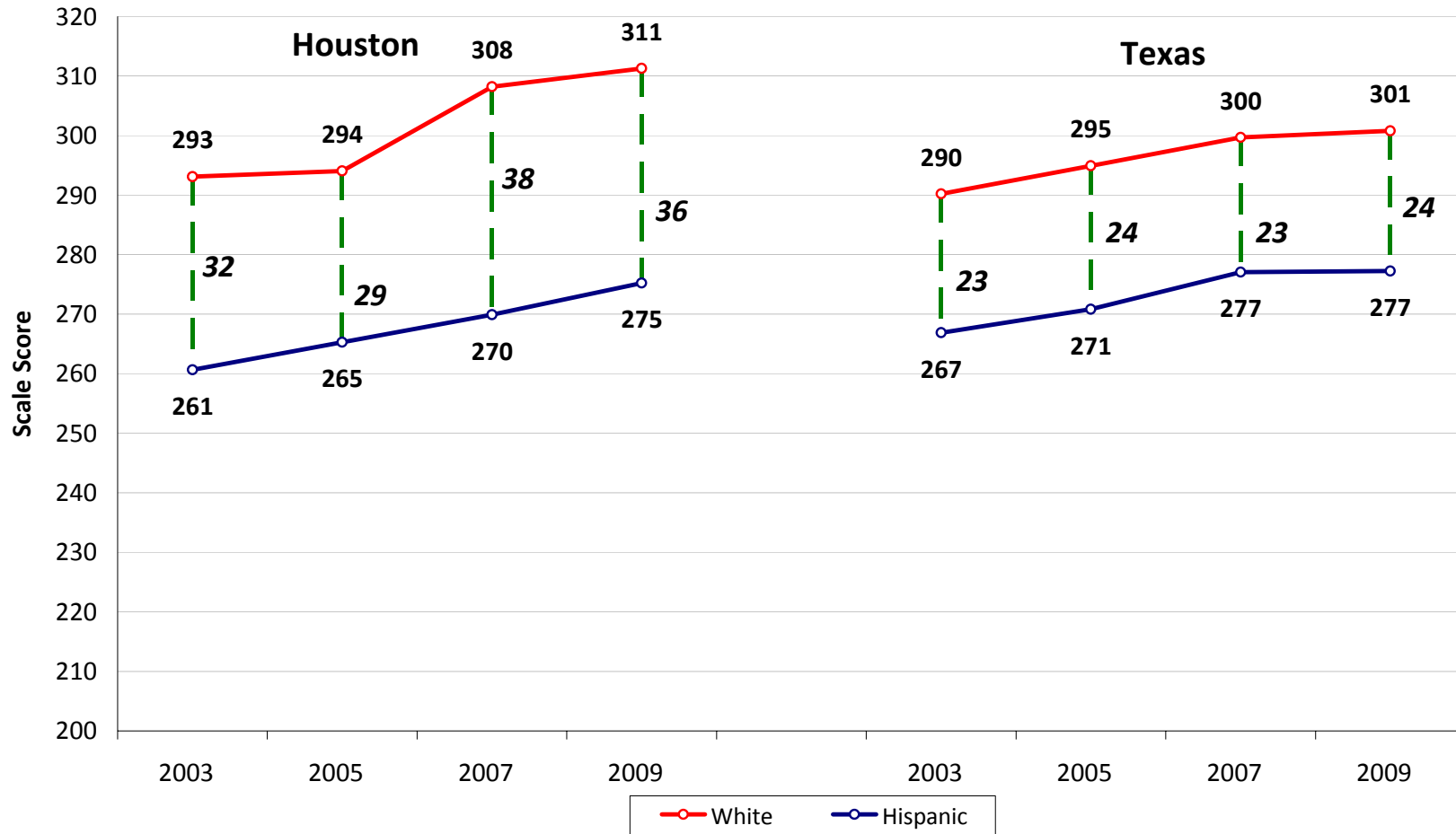
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP).

NOTE: Overall represents HISD.

NOTE: NP Represents National Public

Graph 22

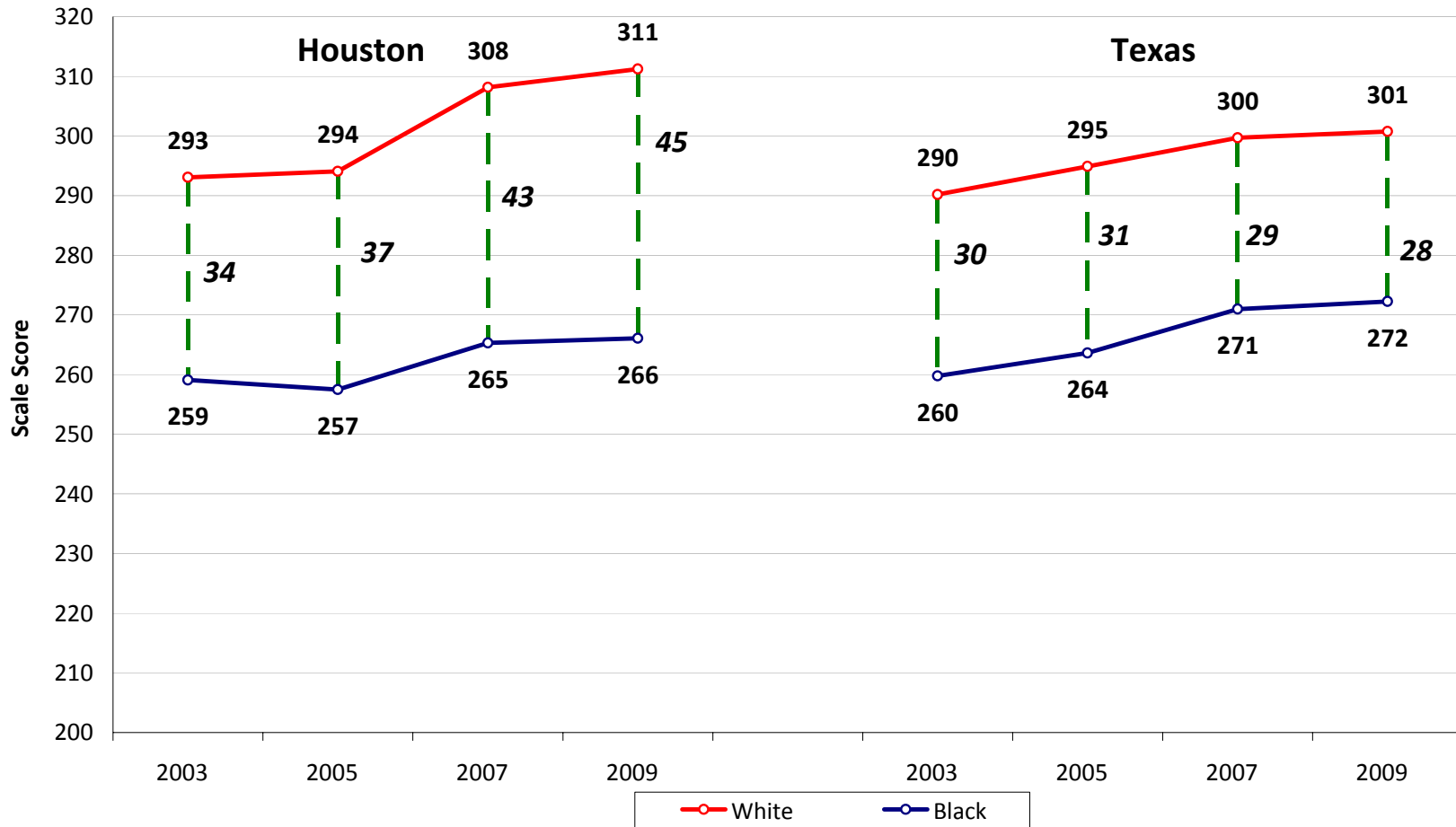
NAEP Mathematics Grade 8 — White - Hispanic Gap - Average Scale Score: 2003-2009



NOTE: The NAEP Mathematics scale ranges from 0 to 500. Observed differences are not necessarily statistically significant.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP).

Graph 23

NAEP Mathematics Grade 8 — White - Black Gap - Average Scale Score: 2003-2009

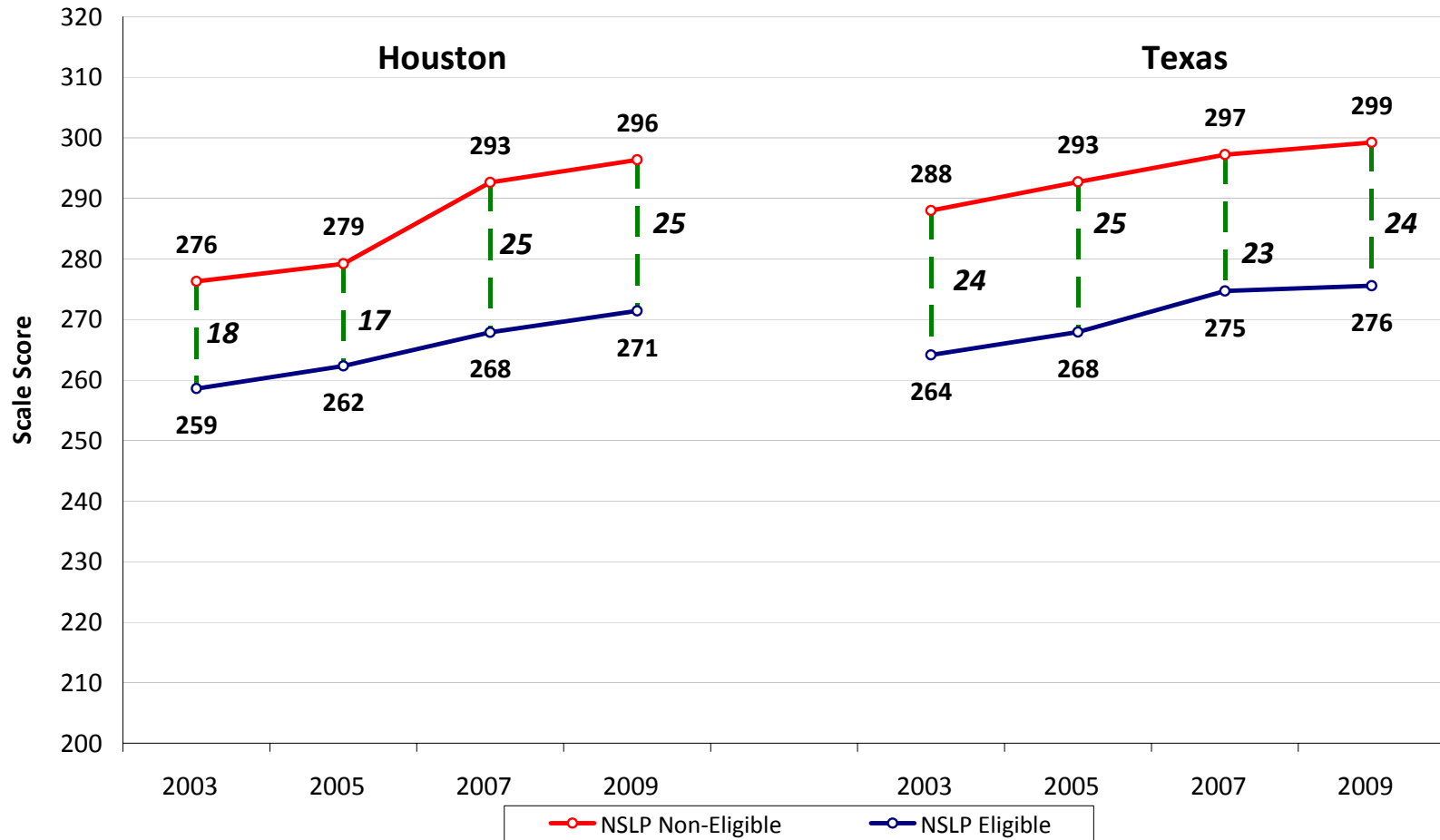


NOTE: The NAEP Mathematics scale ranges from 0 to 500. Observed differences are not necessarily statistically significant.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP).

Graph 24

NAEP Mathematics Grade 8 – National School Lunch Program

Gap - Average Scale Score: 2003-2009



NOTE: The NAEP Mathematics scale ranges from 0 to 500. Observed differences are not necessarily statistically significant.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP).