



# NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS BPS 2017 NAEP RESULTS

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PRESENTATION TO THE SCHOOL COMMITTEE  
APRIL 25, 2018

Since 2003, BPS' has participated in the NAEP Trial for Urban District Assessment (TUDA) program and demonstrated a long history of being one of the highest performing urban school districts in the country.

**2017 Grade 4 Reading**

- Boston scored **equivalent or higher** than **20** participating TUDA districts.
- Boston scored **lower** than only **6** TUDA districts.

**2017 Grade 4 Mathematics**

- Boston scored **equivalent or higher** than **19** TUDA districts.
- Boston scored **lower** than only **7** TUDA districts.

**2017 Grade 8 Reading**

- Boston scored equivalent or higher than **ALL 26** other participating TUDA districts.

**2017 Grade 8 Mathematics**

- Boston scored **equivalent or higher** than **25** participating TUDA districts.
- Boston only scored **lower** than **1** other TUDA district.

Since 2013-14, Massachusetts transitioned assessments twice. MA is also transitioning all grades and subjects to digital based assessments. In 2017, NAEP fully transitioned to digital based assessments, as well.

Boston Public Schools participated in the **NAEP Trial for Urban District Assessment (TUDA)** program since 2003 and took the assessment **online** in 2016-17.

2003-2004

2013-14

2016-17

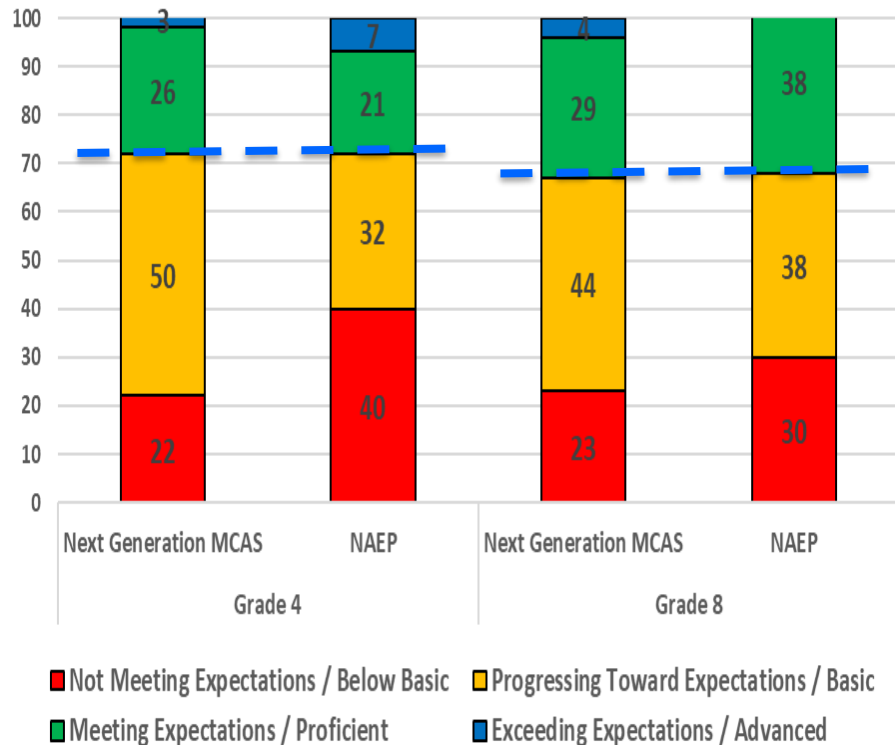
Massachusetts piloted **PARCC** and **computer based assessments**.

Massachusetts administered **Next Generation MCAS** in grades **3 – 8**.

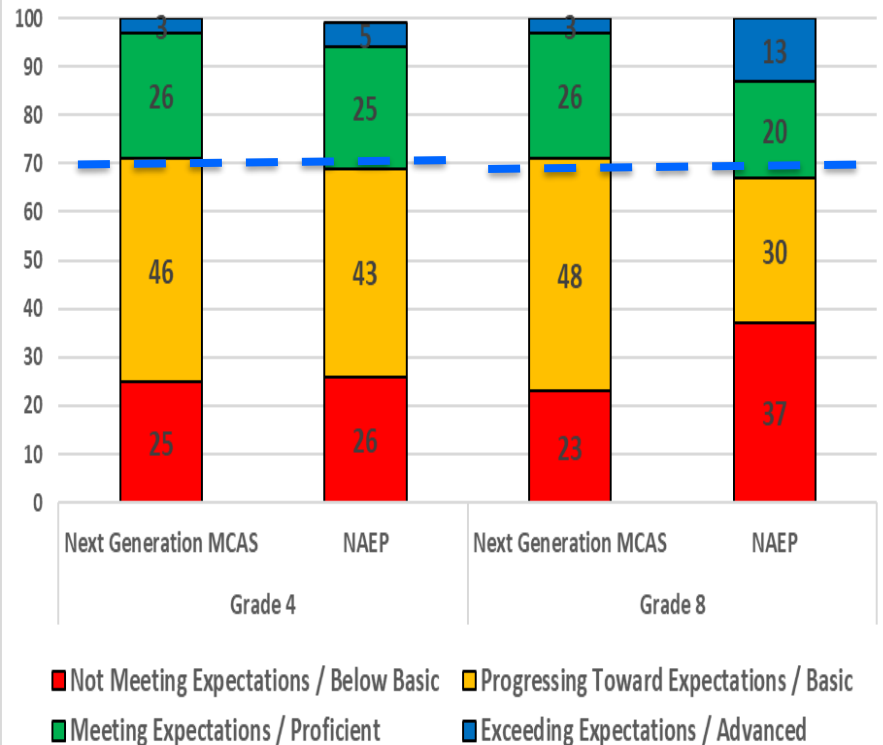
Massachusetts phased **computer based assessments** into new grades and subjects each year.

# Performance of BPS students on NAEP is comparable to their performance on Next Generation MCAS in 2016-17.

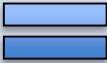







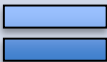

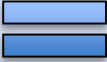

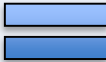


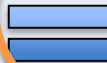
BPS Grades 4 & 8 Reading Performance  
(Next Gen MCAS & NAEP)



BPS Grades 4 & 8 Mathematics Performance  
(Next Gen MCAS & NAEP)



# STATISTICALLY SIGNIFICANT TRENDS IN 4<sup>TH</sup> AND 8<sup>TH</sup> GRADE READING & MATHEMATICS PERFORMANCE

Grade & Subject	Short Term Trend (2015-2017)	Long Term Trend (2003 – 2017)	2017 Large City Comparison	2017 National Comparison
4 <sup>th</sup> grade Reading	 (-2 pts)	 (+11 pts)	 (+ 4 pts)	 (-4 pts)
8 <sup>th</sup> grade Reading	 (+3 pts)	 (+ 9 pts)	 (+ 3 pts)	 (-4 pts)
4 <sup>th</sup> grade Mathematics	 (- 3 pts)	 (+13 pts)	 (+ 1 pts)	 (-6 pts)
8 <sup>th</sup> grade Mathematics	 (-1 pt)	 (+18 pts)	 (+ 6 pts)	 (- 2 pts)

**Note:** NAEP employs statistical tests to assess whether differences in average scaled scores are significant.

**Short Term trends:** Observed between 2015 and 2017.

**Long Term trends:** Observed between 2003 and 2017.

# STATISTICALLY SIGNIFICANT PERFORMANCE TRENDS FOR RACIAL SUBGROUPS

Grade & Subject		Trends for African-American / Black Students	Black vs. White Achievement Gap	Trends for Hispanic / Latino Students	Hispanic vs. White Achievement Gap
4 <sup>th</sup> grade Reading	Long Term	(+8 pts)	23 pts 	(+ 11 pts)	24 pts 
	Short Term	(-5 pts)	29 pts 	(- 1 pt)	25 pts 
8 <sup>th</sup> grade Reading	Long Term	(+ 6 pts)	28 pts 	(+ 8 pts)	28 pts 
	Short Term	(- 1 pt)	35 pts 	(+ 4 pts)	33 pts 
4 <sup>th</sup> grade Math	Long Term	(+ 10 pts)	19 pts 	(+ 12 pts)	18 pts 
	Short Term	(- 2 pts)	27 pts 	(- 2 pts)	25 pts 
8 <sup>th</sup> grade Math	Long Term	(+ 10 pts)	38 pts 	(+ 16 pts)	37 pts 
	Short Term	(- 8 pts)	53 pts 	(- 3 pts)	46 pts 

**Note:** NAEP employs statistical tests to assess whether differences in average scaled scores are significant.

**Short Term:** Trends shown from 2015 and 2017 and gaps measured in 2017<sup>6</sup>

**Long Term:** Trends shown from 2003 and 2017 and gaps measured in 2003.

# STATISTICALLY SIGNIFICANT PERFORMANCE TRENDS FOR OTHER SUBGROUPS

Grade & Subject		Trends for Low Income Students	Trends for English Learners	Trends for Students with Disabilities	Trends for Male Students	Trends for Female Students
4 <sup>th</sup> grade Reading	Long Term	↑ (+8 pts)	== (+9 pts)	== (+6 pts)	↑ (+13 pts)	↑ (+10 pts)
	Short Term		== (-4 pts)	== (-5 pts)	== (-1 pt)	== (-3 pts)
8 <sup>th</sup> grade Reading	Long Term	↑ (+7 pts)	↑ (+15 pts)	↑ (+16 pts)	↑ (+11 pts)	↑ (+8 pts)
	Short Term		== (+3 pts)	== (+5 pts)	== (+3 pts)	== (+4 pts)
4 <sup>th</sup> grade Math	Long Term	↑ (+11 pts)	↑ (+15 pts)	↑ (+10 pts)	↑ (+14 pts)	↑ (+12 pts)
	Short Term		== (-2 pts)	== (-4 pts)	== No change	== (-5 pts)
8 <sup>th</sup> grade Math	Long Term	↑ (+15 pts)	↑ (+18 pts)	↑ (+23 pts)	↑ (+18 pts)	↑ (+18 pts)
	Short Term		== No change	== No change	== No change	== (-4 pts)

Note: NAEP employs statistical tests to assess whether differences in average scaled scores are significant.

Short Term trends: Observed between 2015 and 2017.

Long Term trends: Observed between 2003 and 2017.

# STATISTICALLY SIGNIFICANT PERFORMANCE TRENDS, BY PERCENTILE BANDS

Grade & Subject		10 <sup>th</sup> Percentile Trends	25 <sup>th</sup> Percentile Trends	50 <sup>th</sup> Percentile Trends	75 <sup>th</sup> Percentile Trends	90 <sup>th</sup> Percentile Trends
4 <sup>th</sup> grade Reading	Long Term	▬▬ (+6 pts)	⬆️ (+8 pts)	⬆️ (+11 pts)	⬆️ (+14 pts)	⬆️ (+17 pts)
	Short Term	▬▬ (-6 pts)	⬇️ (-6 pts)	▬▬ (-3 pts)	▬▬ No change	▬▬ (+4 pts)
8 <sup>th</sup> grade Reading	Long Term	▬▬ (+6 pts)	⬆️ (+7 pts)	⬆️ (+11 pts)	⬆️ (+10 pts)	⬆️ (+9 pts)
	Short Term	▬▬ (+2 pts)	▬▬ (+2 pts)	▬▬ (+5 pts)	▬▬ (+4 pts)	▬▬ (+2 pts)
4 <sup>th</sup> grade Math	Long Term	⬆️ (+6 pts)	⬆️ (+10 pts)	⬆️ (+14 pts)	⬆️ (+18 pts)	⬆️ (+20 pts)
	Short Term	▬▬ (-3 pts)	▬▬ (-3 pts)	▬▬ (-3 pts)	▬▬ (-2 pts)	▬▬ No change
8 <sup>th</sup> grade Math	Long Term	⬆️ (+11 pts)	⬆️ (+11 pts)	⬆️ (+17 pts)	⬆️ (+24 pts)	⬆️ (+25 pts)
	Short Term	▬▬ (-2 pts)	▬▬ (-5 pts)	▬▬ (-4 pts)	▬▬ (+2 pts)	▬▬ (+4 pts)

**Note:** NAEP employs statistical tests to assess whether differences in average scaled scores are significant.

**Short Term trends:** Observed between 2015 and 2017.  
**Long Term trends:** Observed between 2003 and 2017.



## How does BPS fit into the national context?

- 4<sup>th</sup> grade Reading and 4<sup>th</sup> & 8<sup>th</sup> grade Mathematics scores remained **unchanged nationally** between 2015 and 2017
- Average scores in 8<sup>th</sup> grade Reading **improved nationally**
- Average scores for students at the **higher percentile bands** improved nationally, while scores for students at the **lower percentile bands declined or remained unchanged**

# TUDA District Long and Short Term Gains over Time

Average scores and score-point changes between 2017 & 2015 and 2017 & 2007 for public school students, by participating district

District	Mathematics - Grade 4			Reading - Grade 4			Mathematics - Grade 8			Reading - Grade 8		
	2017	'17 - '15	'17 - '07	2017	'17 - '15	'17 - '07	2017	'17 - '15	'17 - '07	2017	'17 - '15	'17 - '07
National public	239	-1	0	221	-1	+1	282	+1	+2	265	+1	+4
Large city <sup>1</sup>	232	-2	+2	213	0	+5	274	+1	+6	258	+1	+8
Albuquerque	230	-1	—	207	0	—	270	-1	—	255	+4	—
Atlanta	231	+3	+7	214	+2	+7	265	-2	+9	254	+2	+9
Austin	243	-3	+3	217	-3	-1	283	-1	+1	263	+1	+6
Baltimore City	215	0	—	197	-2	—	255	0	—	243	-1	—
Boston	233	-2	0	217	-2	+7	280	-1	+3	261	+4	+8
Charlotte	244	-4	0	225	-1	+3	287	+1	+5	260	-2	+1
Chicago	232	0	+12	211	-2	+11	276	+1	+15	259	+2	+9
Clark County (NV)	230	—	—	213	—	—	272	—	—	258	—	—
Cleveland	214	-5	-1	196	0	-2	257	+3	+1	237	-3	-9
Dallas	234	-4	—	201	-3	—	268	-3	—	246	-3	—
Denver	229	—	—	214	—	—	272	—	—	258	—	—
Detroit	200	-5	—	182	-5	—	246	+1	—	235	-2	—
District of Columbia (DCPS)	231	-1	+17	213	-1	+16	262	+4	+14	246	+1	+5
Duval County (FL)	248	+5	—	226	0	—	275	+1	—	263	-1	—
Fort Worth (TX)	230	—	—	206	—	—	269	—	—	248	—	—
Fresno	221	+4	—	203	+4	—	255	-2	—	244	+2	—
Guilford County (NC)	240	—	—	222	—	—	276	—	—	260	—	—
Hillsborough County (FL)	245	+1	—	227	-2	—	277	+2	—	265	+4	—
Houston	235	-3	+1	205	-4	0	273	-3	0	249	-2	-3
Jefferson County (KY)	233	-2	—	221	-1	—	271	-1	—	261	-1	—
Los Angeles	223	-1	+2	207	+3	+12	267	+3	+9	254	+3	+14
Miami-Dade	245	+3	—	229	+3	—	274	-1	—	261	-4	—
Milwaukee	216	—	—	195	—	—	254	—	—	245	—	—
New York City	229	-2	-7	214	0	+1	275	-1	+5	258	0	+9
Philadelphia	214	-3	—	197	-3	—	260	-7	—	248	0	—
San Diego	237	+5	+4	222	+6	+12	283	+2	+10	264	+3	+14
Shelby County (TN)	225	—	—	203	—	—	257	—	—	248	—	—
Districts with Increase		4	3		1	6		0	6		2	8
Districts with Decrease		4	1		0	0		1	0		0	1

Average Score in 2017 is higher; Significant Gain

Average Score in 2017 is lower; Significant Decline

<sup>1</sup> Large city includes students from all cities in the nation with populations of 250,000 or more including the participating districts.

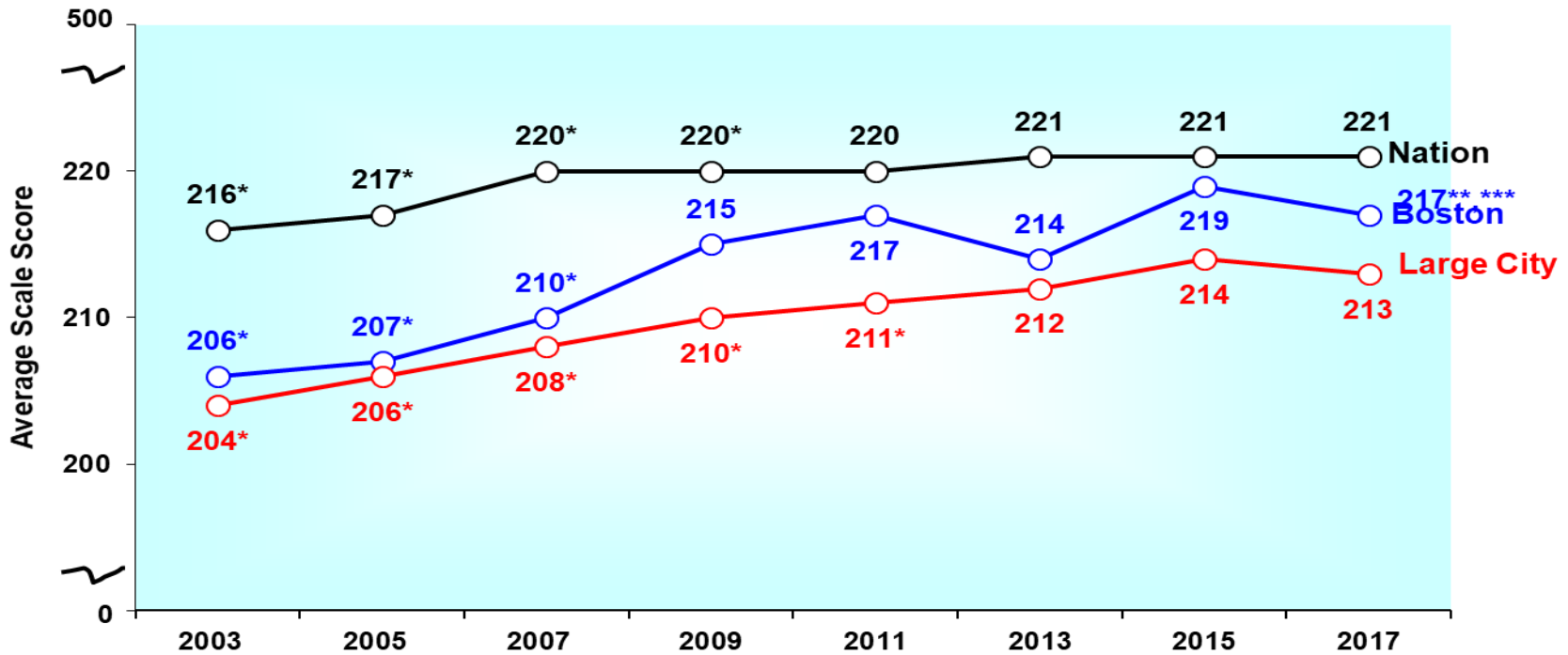
NOTE: The NAEP mathematics and reading scales range from 0–500. Score differences are calculated based on differences between unrounded average scores.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2007, 2015 and 2017 Mathematics and Reading Assessments.

# APPENDIX

# 4<sup>TH</sup> GRADE READING 2003 - 2017

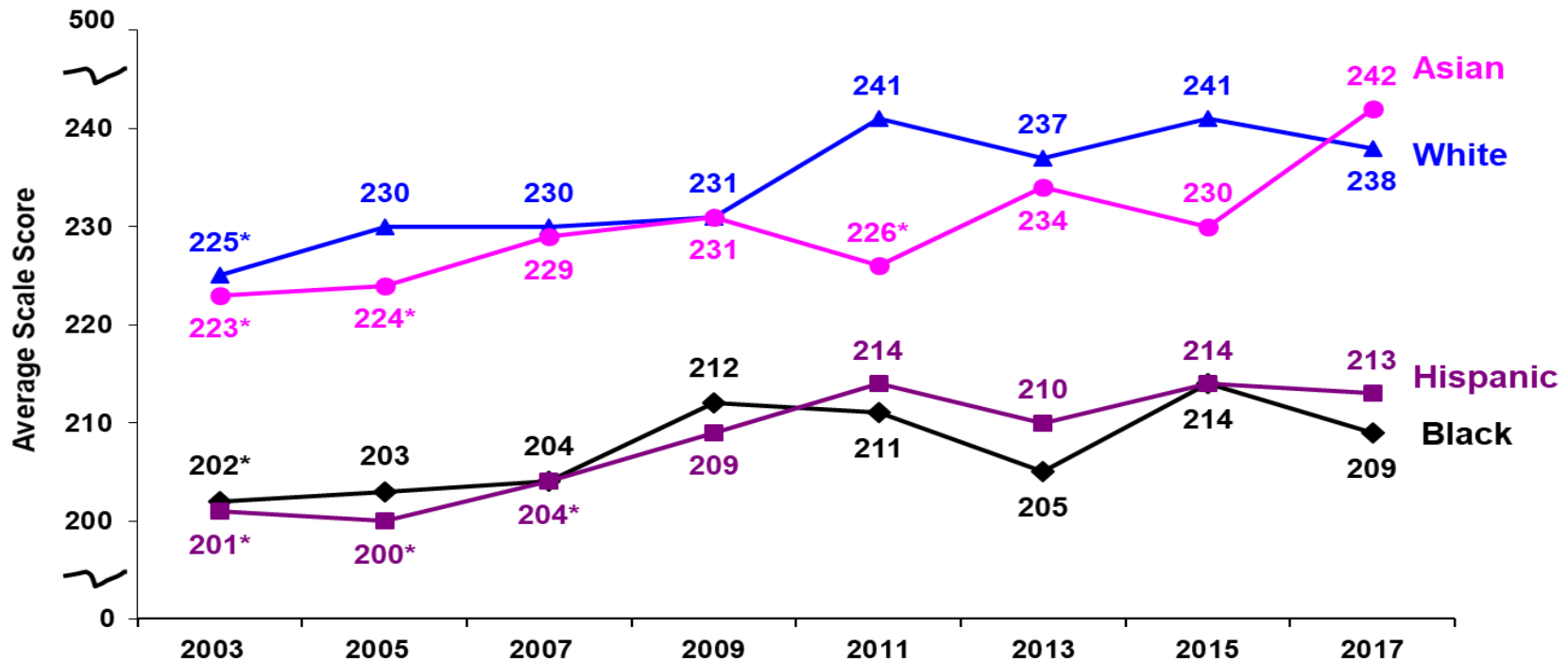
**Grade 4 Reading  
Average scale scores: 2003-2017**



NOTE: The NAEP Reading scale ranges from 0 to 500.  
 \* Significantly different (P < .05) from 2017.  
 \*\* Significantly different (P < .05) from Large City in 2017.  
 \*\*\* Significantly different (P < .05) from Nation in 2017.

# 4<sup>TH</sup> GRADE READING 2003 – 2017, SUBGROUPS

**Grade 4 Reading by Race/Ethnicity**  
Average scale scores: 2003-2017

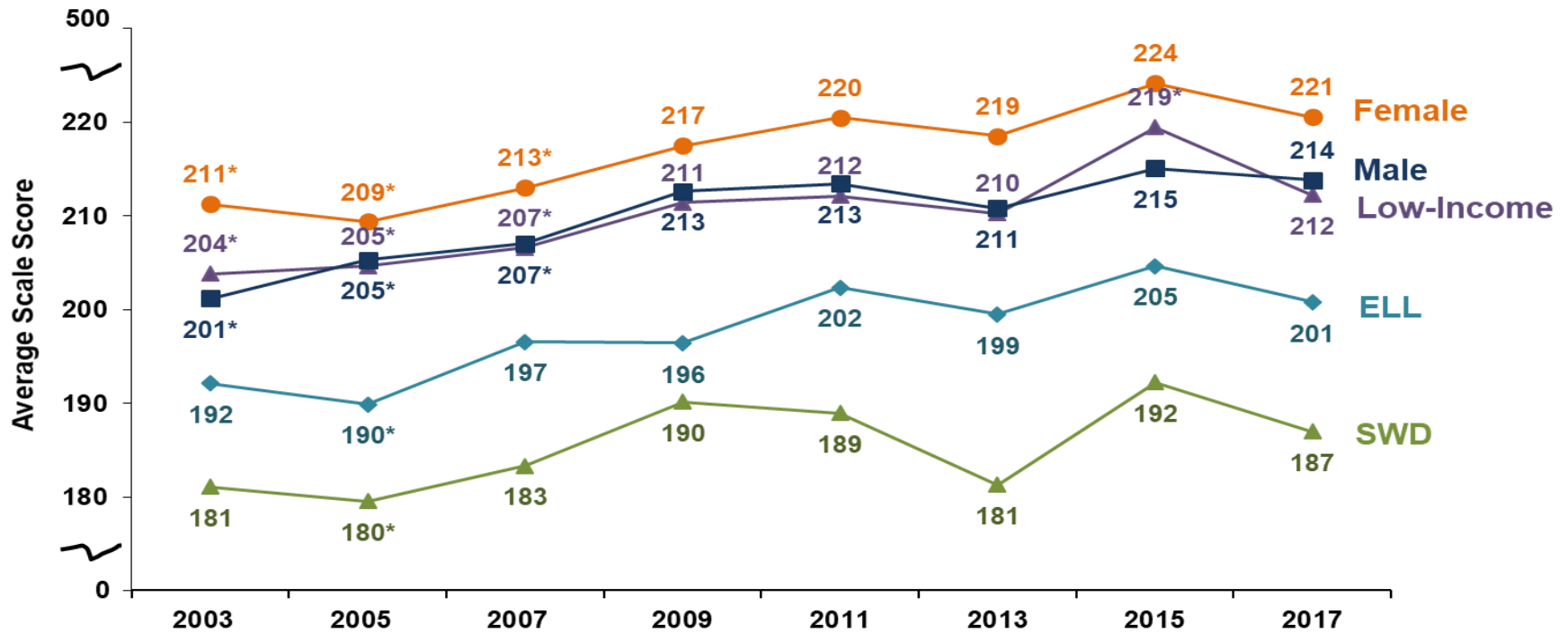


NOTE: The NAEP Reading scale ranges from 0 to 500.

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# 4<sup>TH</sup> GRADE READING 2003 – 2017, SUBGROUPS

**Grade 4 Reading by Other Subgroup**  
Average scale scores: 2003-2017

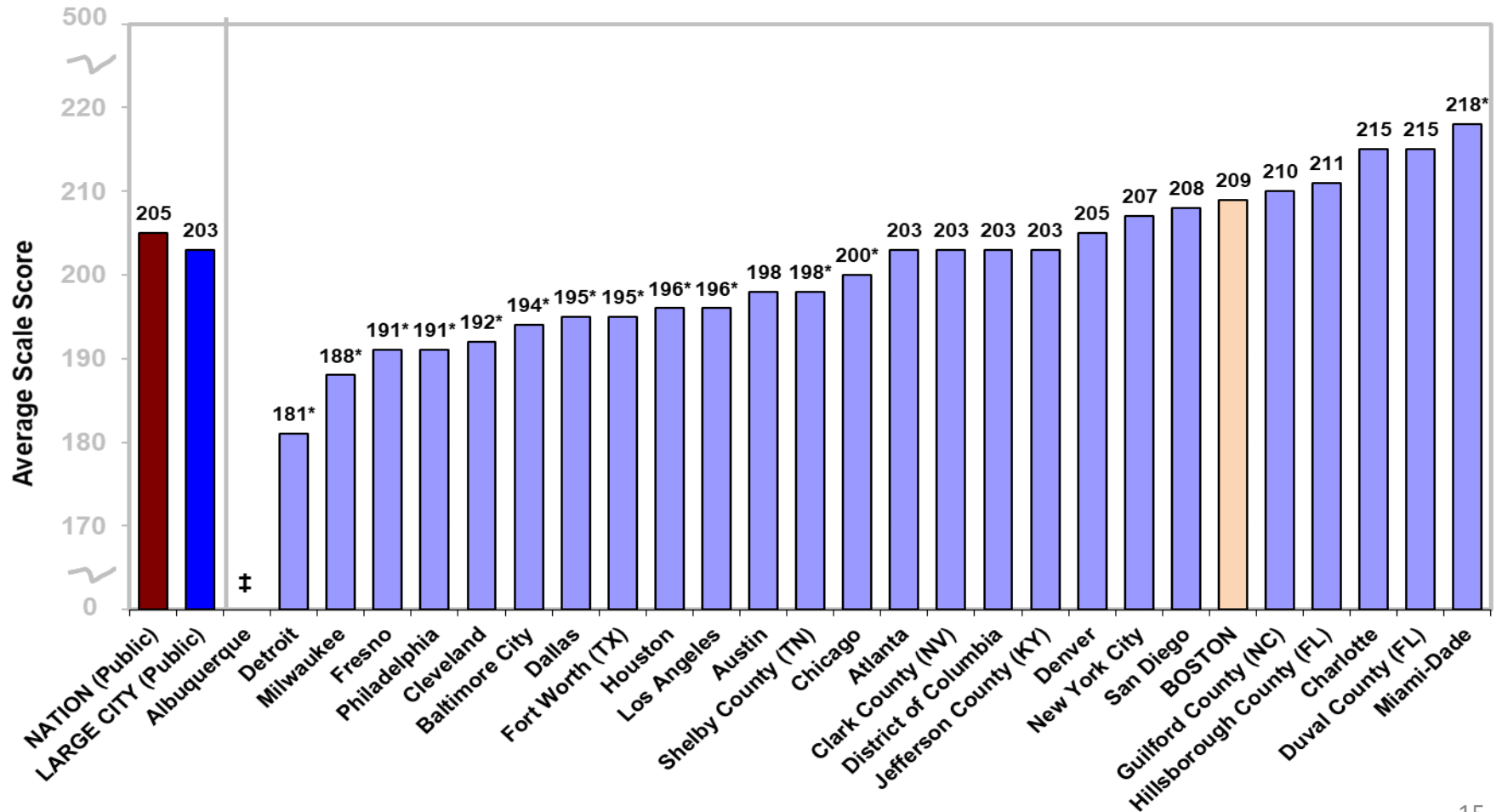


NOTE: The NAEP Reading scale ranges from 0 to 500.  
\* Significantly different ( $P < .05$ ) from 2017.

# 4<sup>th</sup> grade Reading: African-American student performance

## Grade 4 Black Students

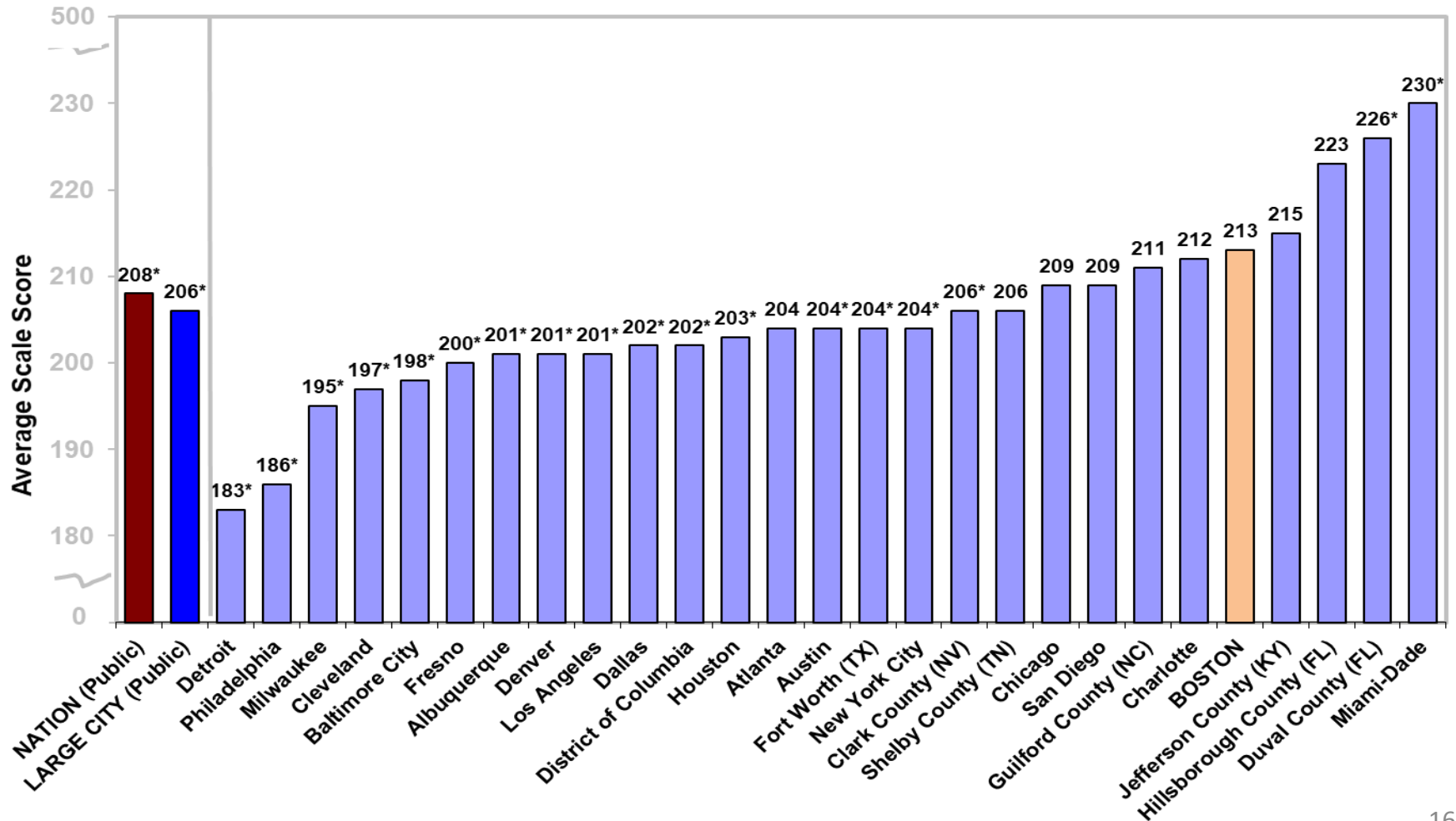
2017 Reading Average Scale Score Comparisons: Boston and Nation, Large City & TUDA Districts



# 4<sup>th</sup> grade Reading: Hispanic student performance

## Grade 4 Hispanic Students

2017 Reading Average Scale Score Comparisons: Boston and Nation, Large City & TUDA Districts

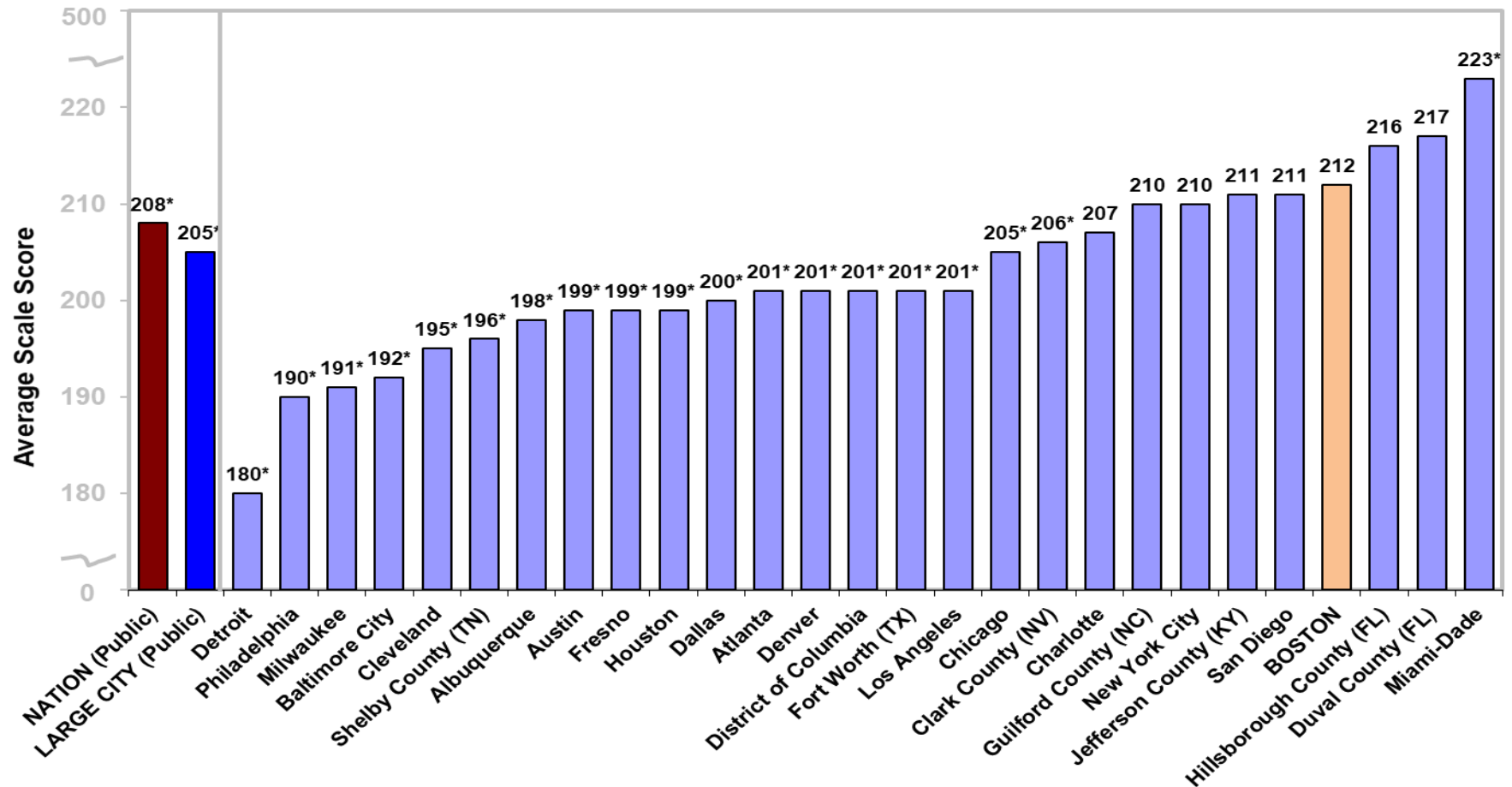




# 4<sup>th</sup> grade Reading: Low Income Students

## Grade 4 Low-Income Students

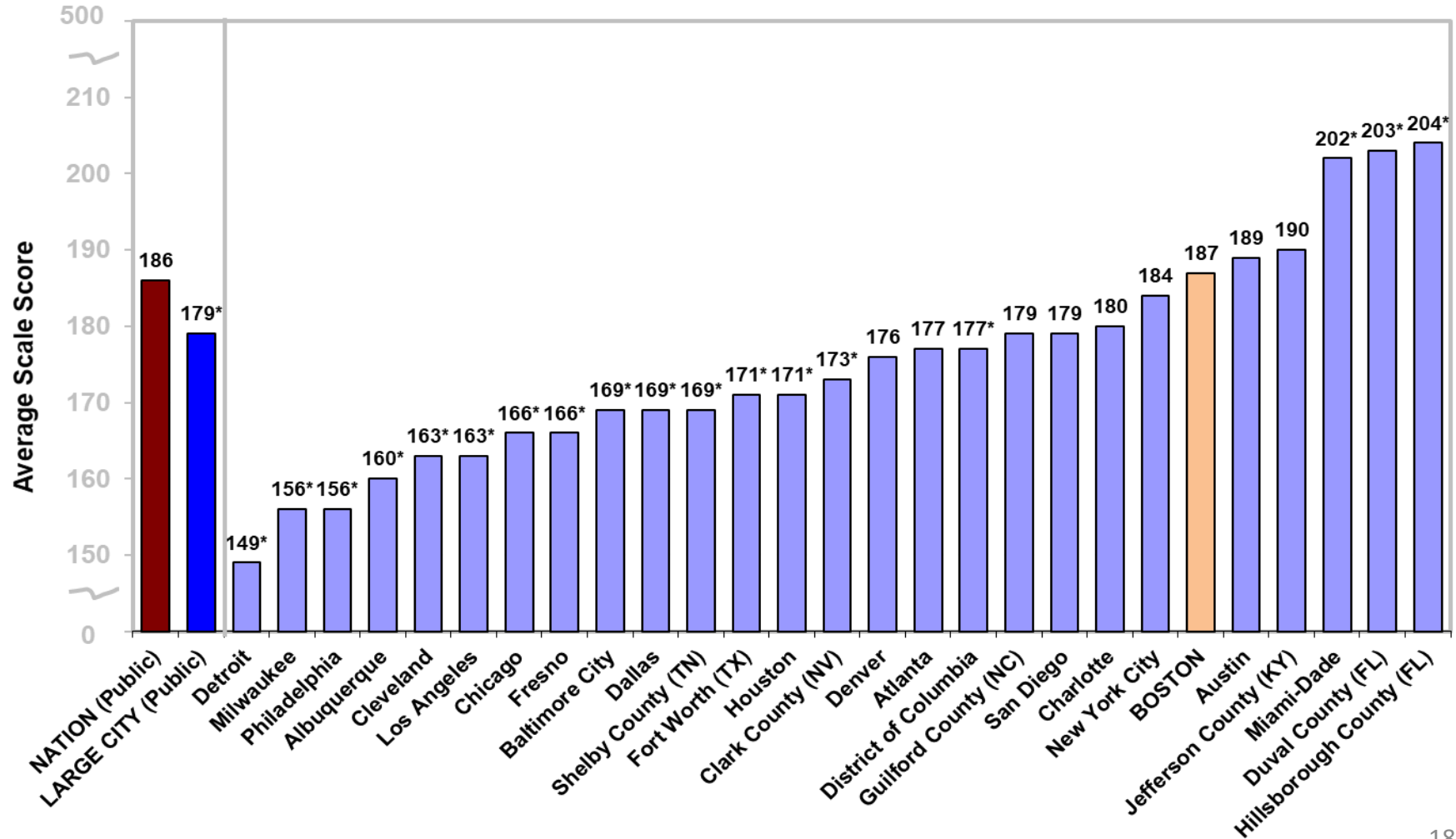
2017 Reading Average Scale Score Comparisons: Boston and Nation, Large City & TUDA Districts



# 4<sup>th</sup> grade Reading: Student with Disabilities

## Grade 4 Students with Disabilities

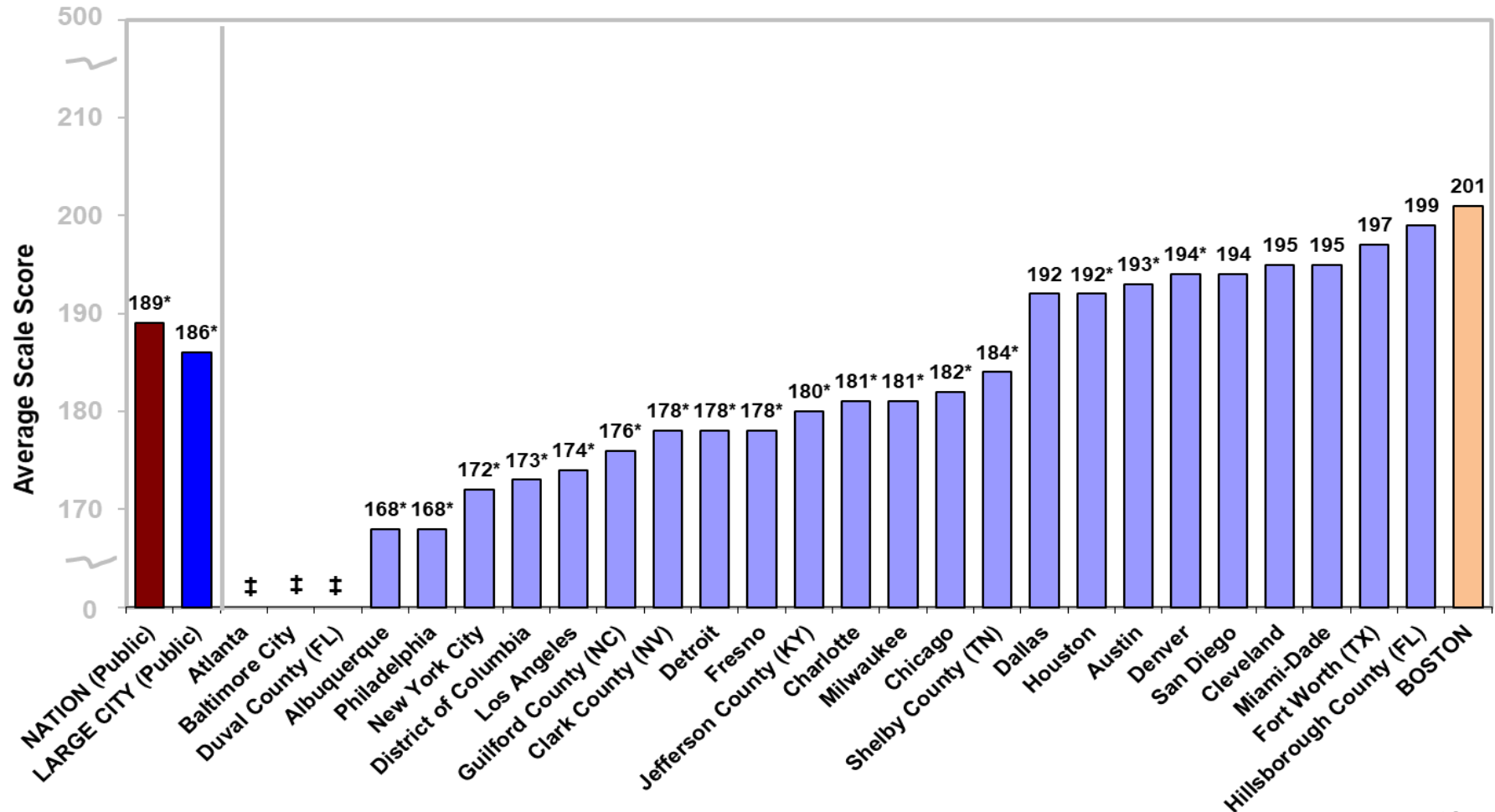
2017 Reading Average Scale Score Comparisons: Boston and Nation, Large City & TUDA Districts



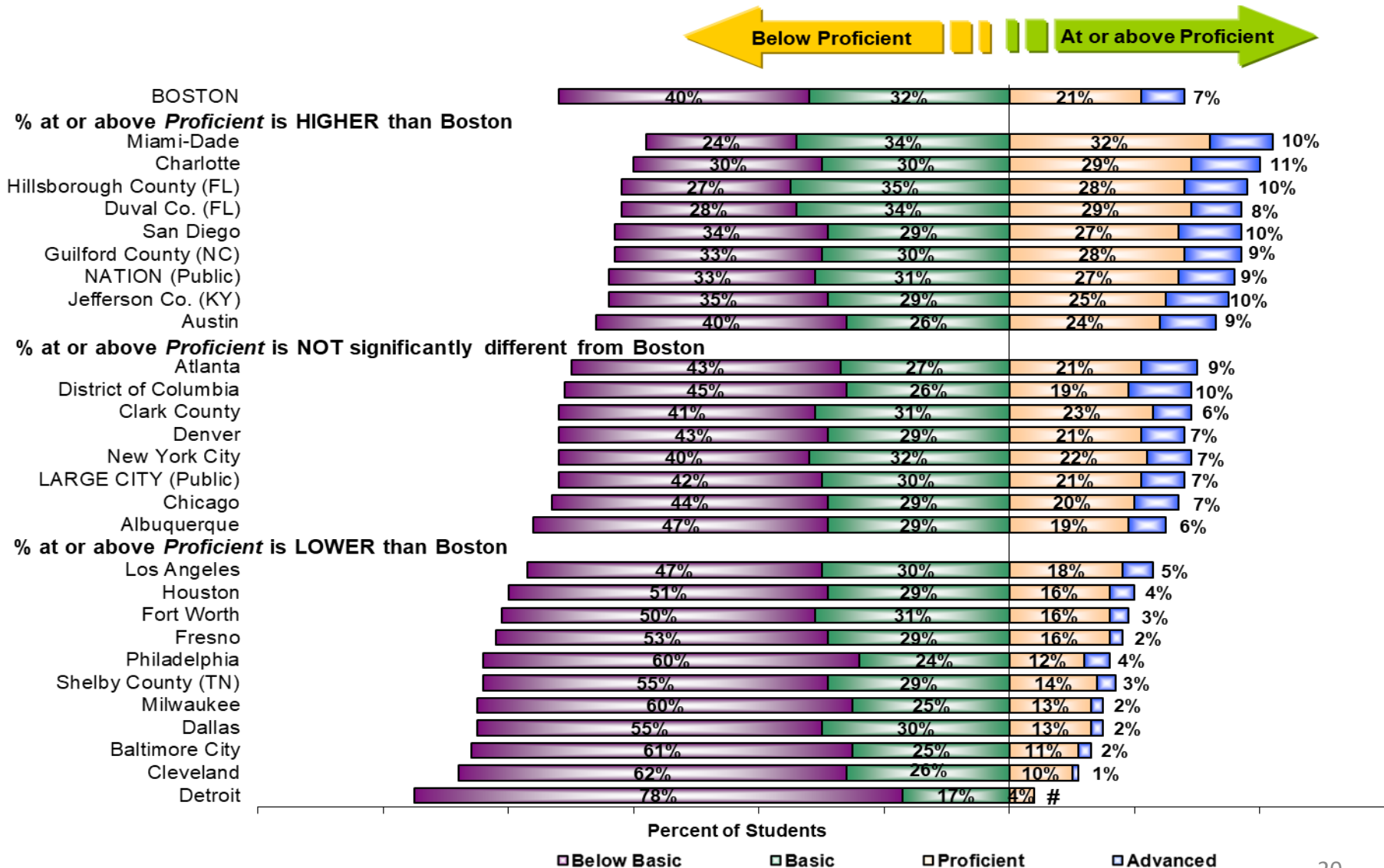
# 4<sup>th</sup> grade Reading: English Learners

## Grade 4 English Language Learners

2017 Reading Average Scale Score Comparisons: Boston and Nation, Large City & TUDA Districts

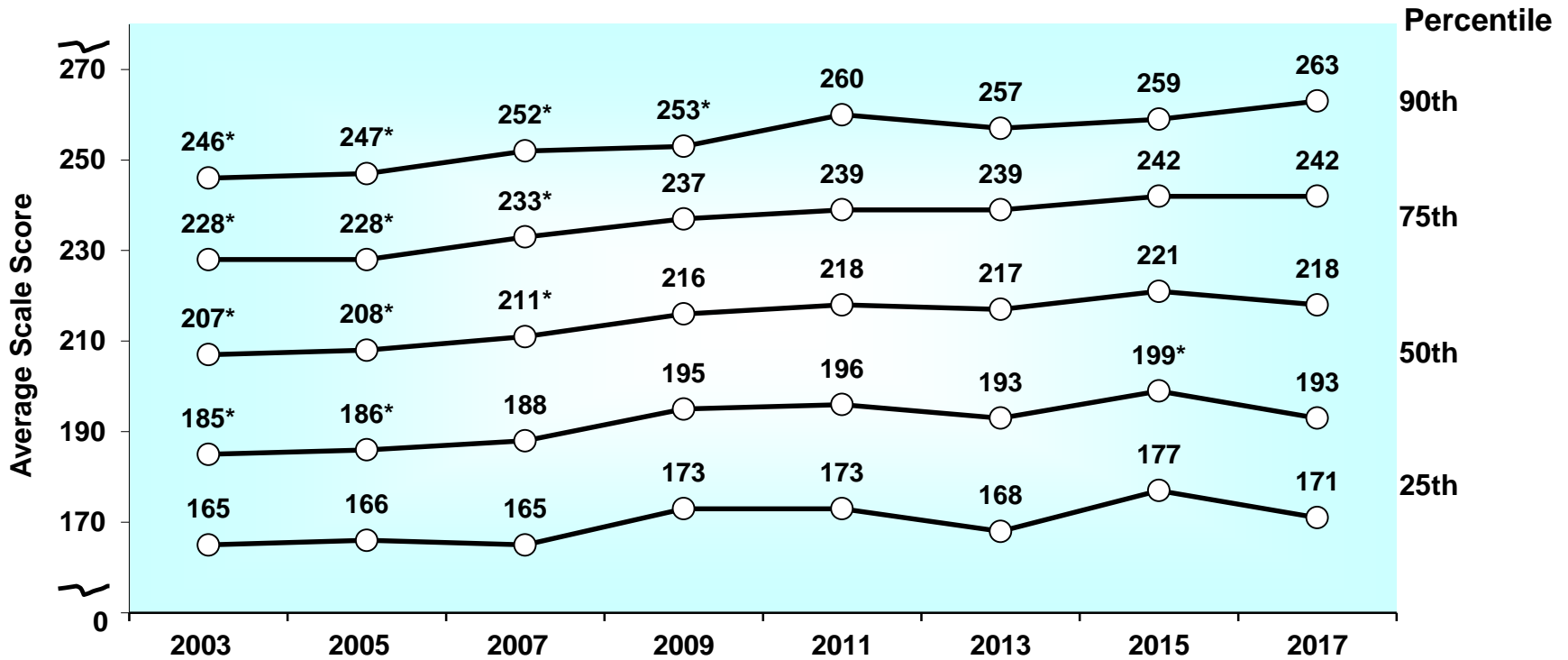


# 4<sup>th</sup> grade Reading: At or Above Proficient



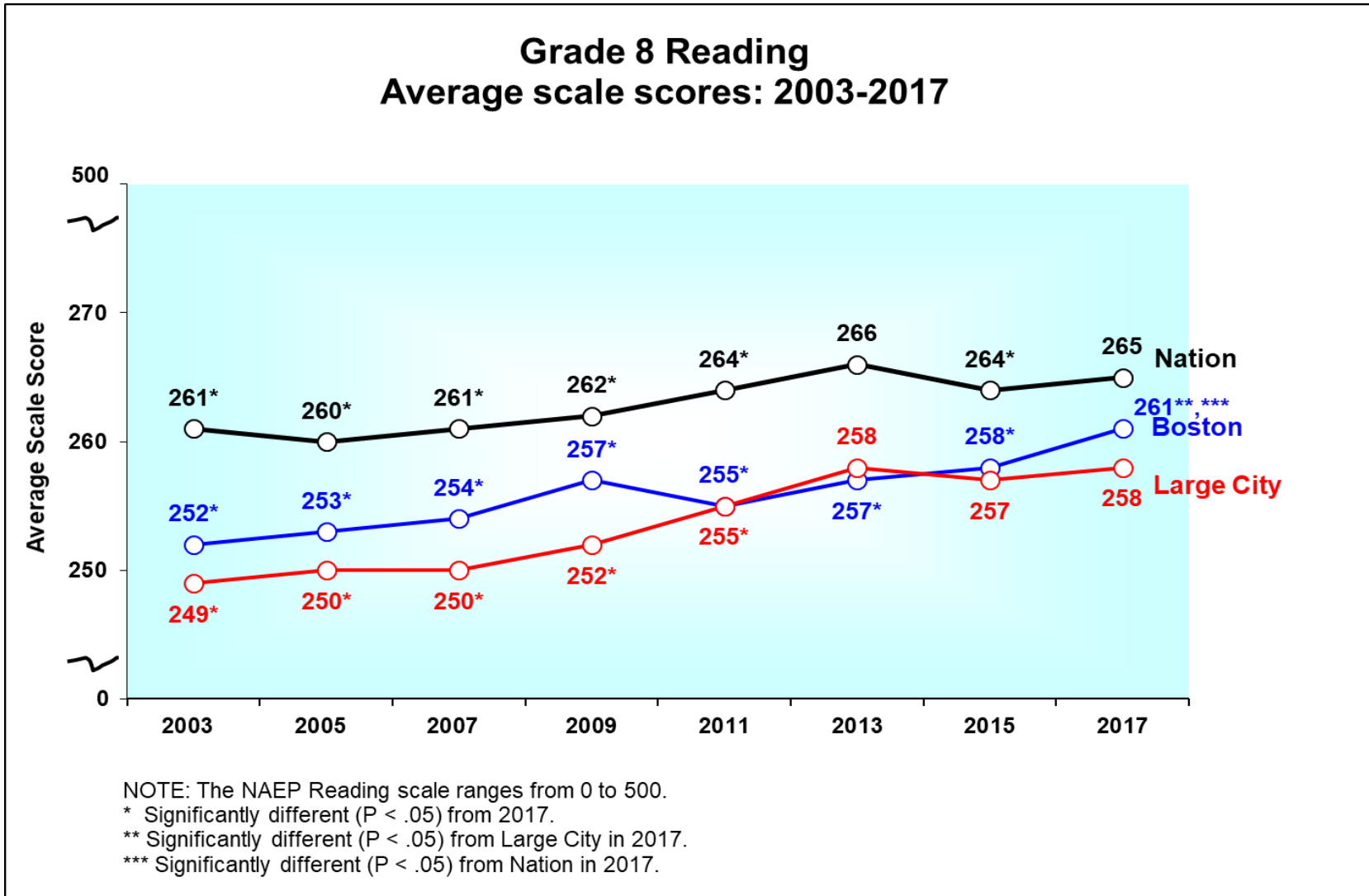
# 4<sup>TH</sup> GRADE READING 2003 – 2017, PERCENTILE BANDS

**Trend in Grade 4 Reading Percentile Scores**

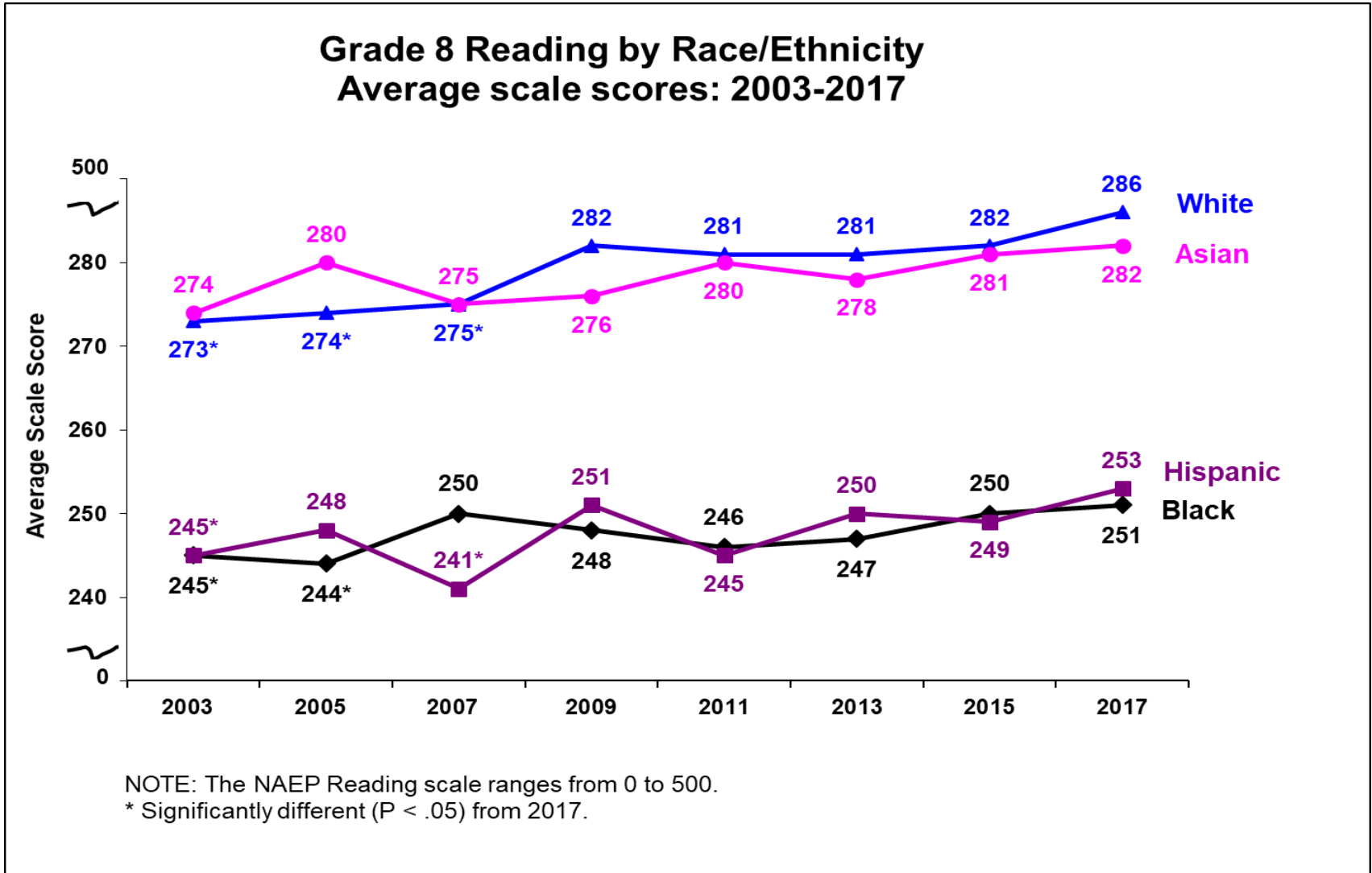


NOTE: The NAEP Reading scale ranges from 0 to 500.

# 8<sup>th</sup> GRADE READING 2003 - 2017

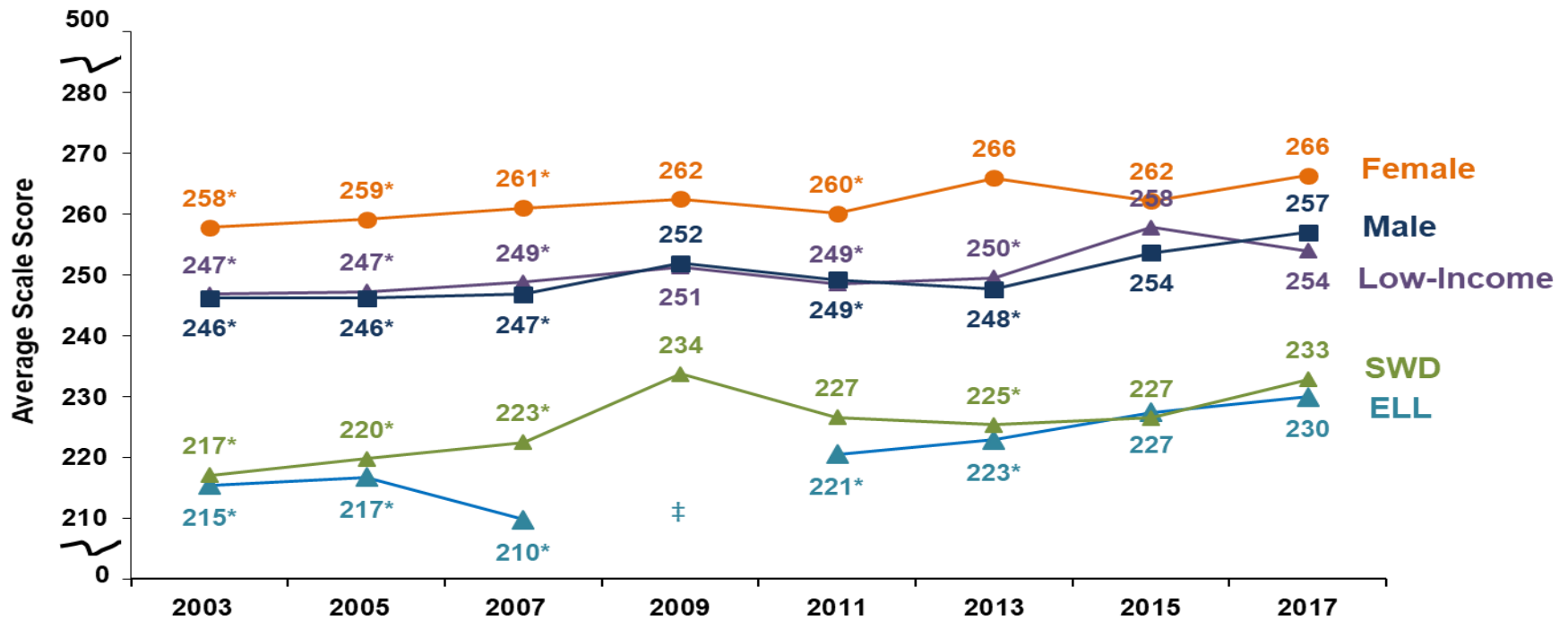


# 8<sup>TH</sup> GRADE READING 2003 – 2017, SUBGROUPS



# 8<sup>TH</sup> GRADE READING 2003 – 2017, SUBGROUPS

**Grade 8 Reading by Other Subgroup**  
Average scale scores: 2003-2017



NOTE: The NAEP Reading scale ranges from 0 to 500.

\* Significantly different ( $P < .05$ ) from 2017.

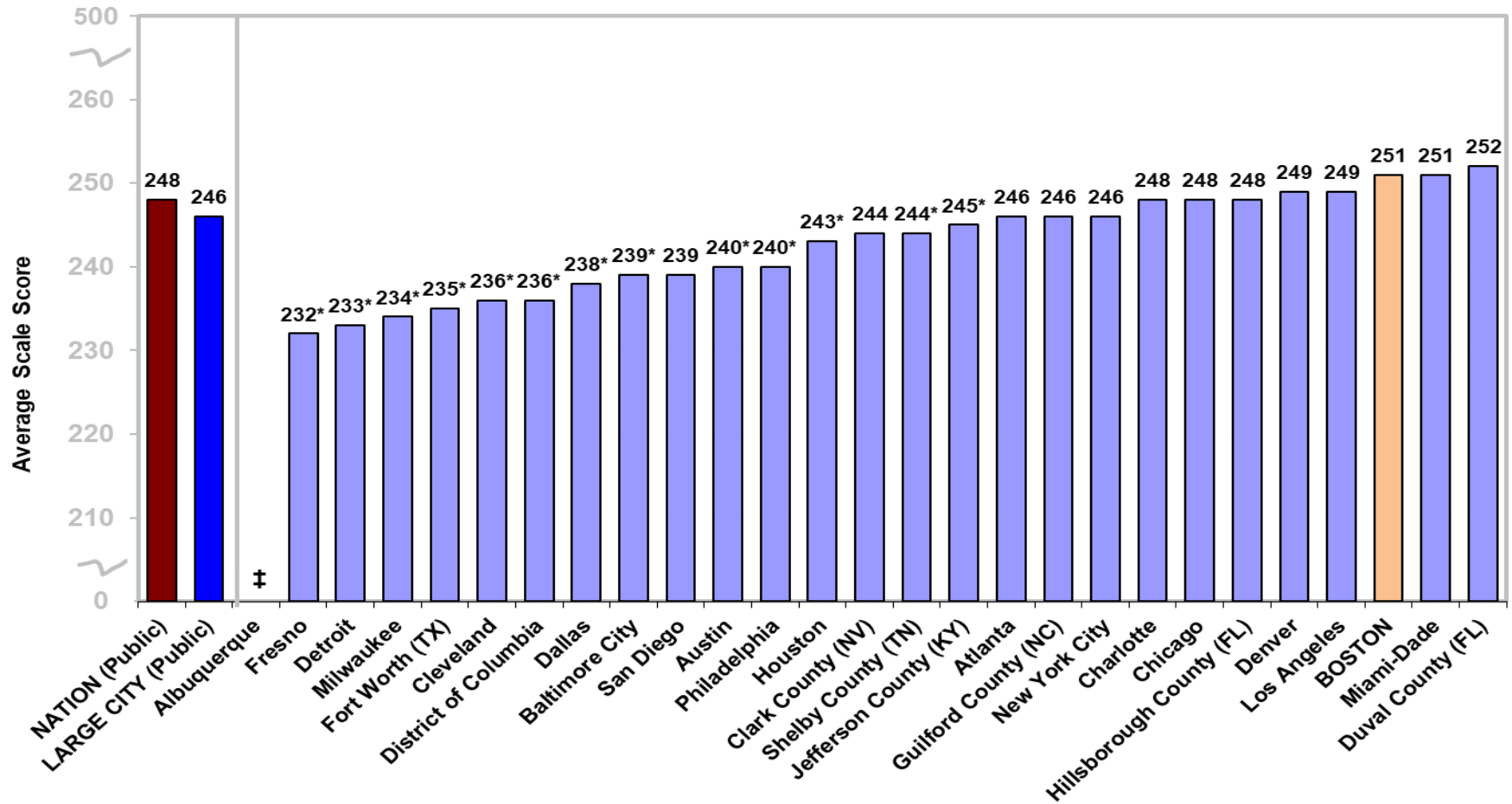
‡ A significance test could not be performed because reporting standards were not met



# 8<sup>th</sup> grade Reading: African-American student performance

## Grade 8 Black Students

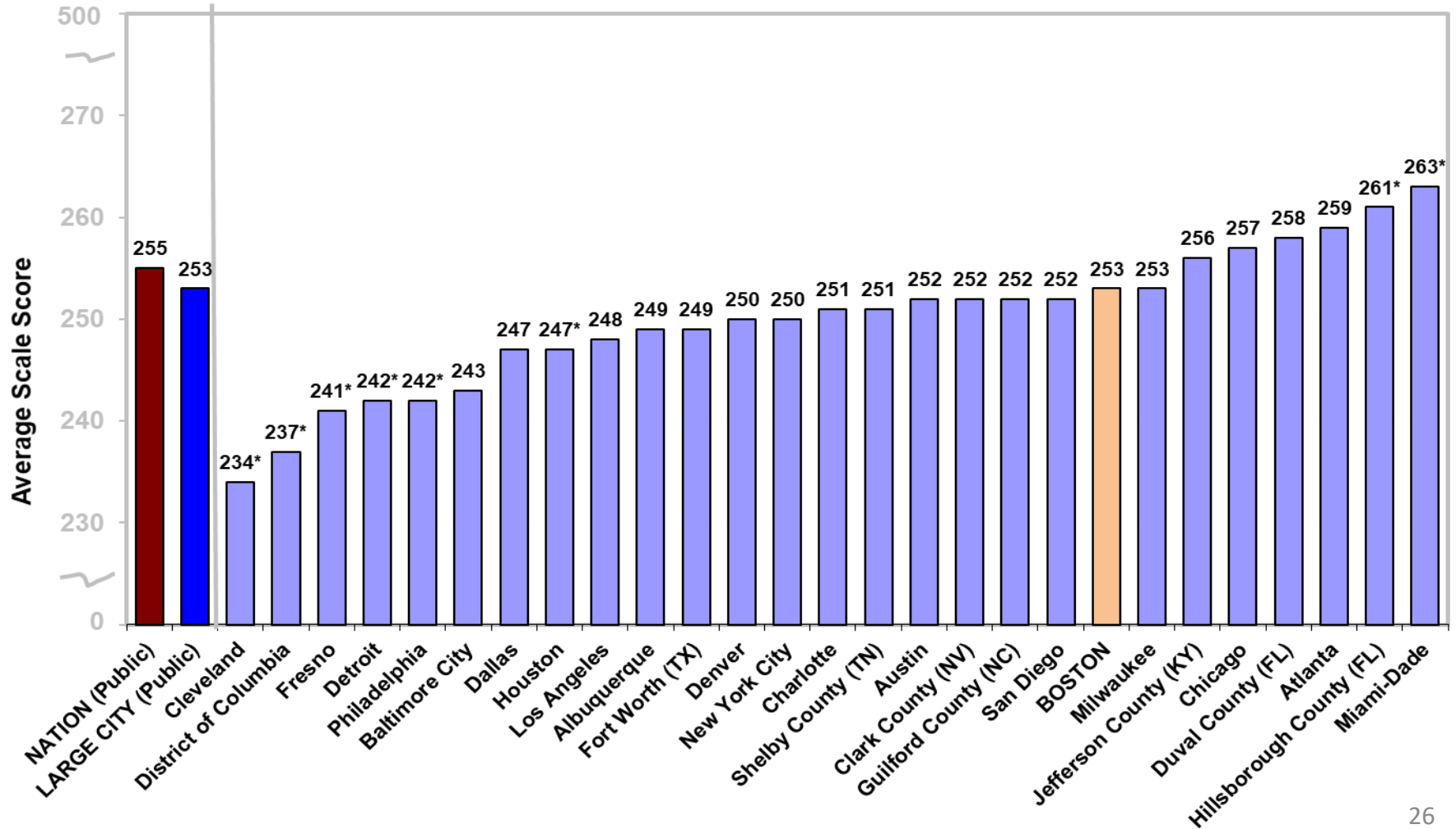
2017 Reading Average Scale Score Comparisons: Boston and Nation, Large City & TUDA Districts



# 8<sup>th</sup> grade Reading: Latino students performance

## Grade 8 Hispanic Students

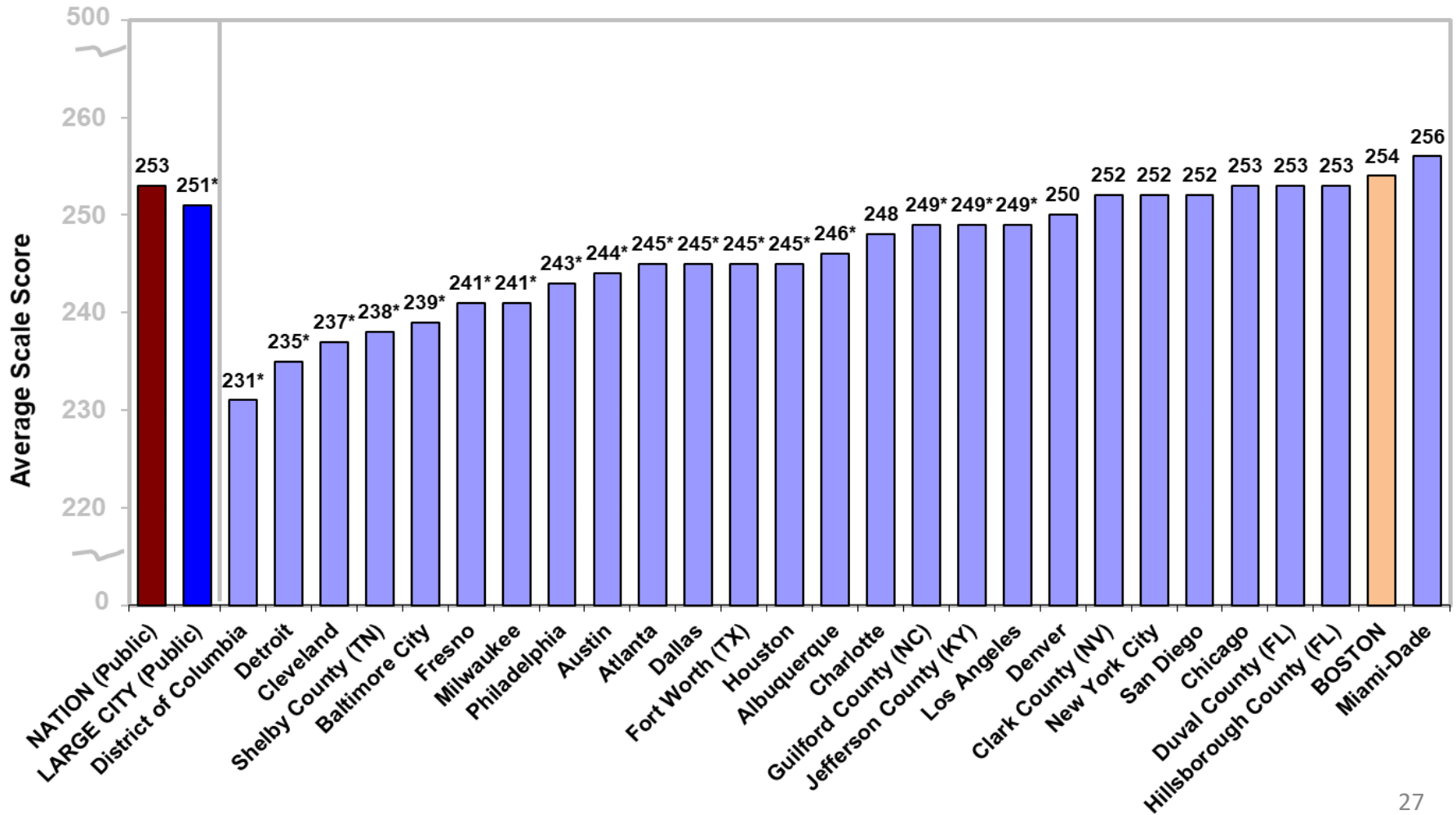
2017 Reading Average Scale Score Comparisons: Boston and Nation, Large City & TUDA Districts



# 8<sup>th</sup> grade Reading: Low Income Students

## Grade 8 Low-Income Students

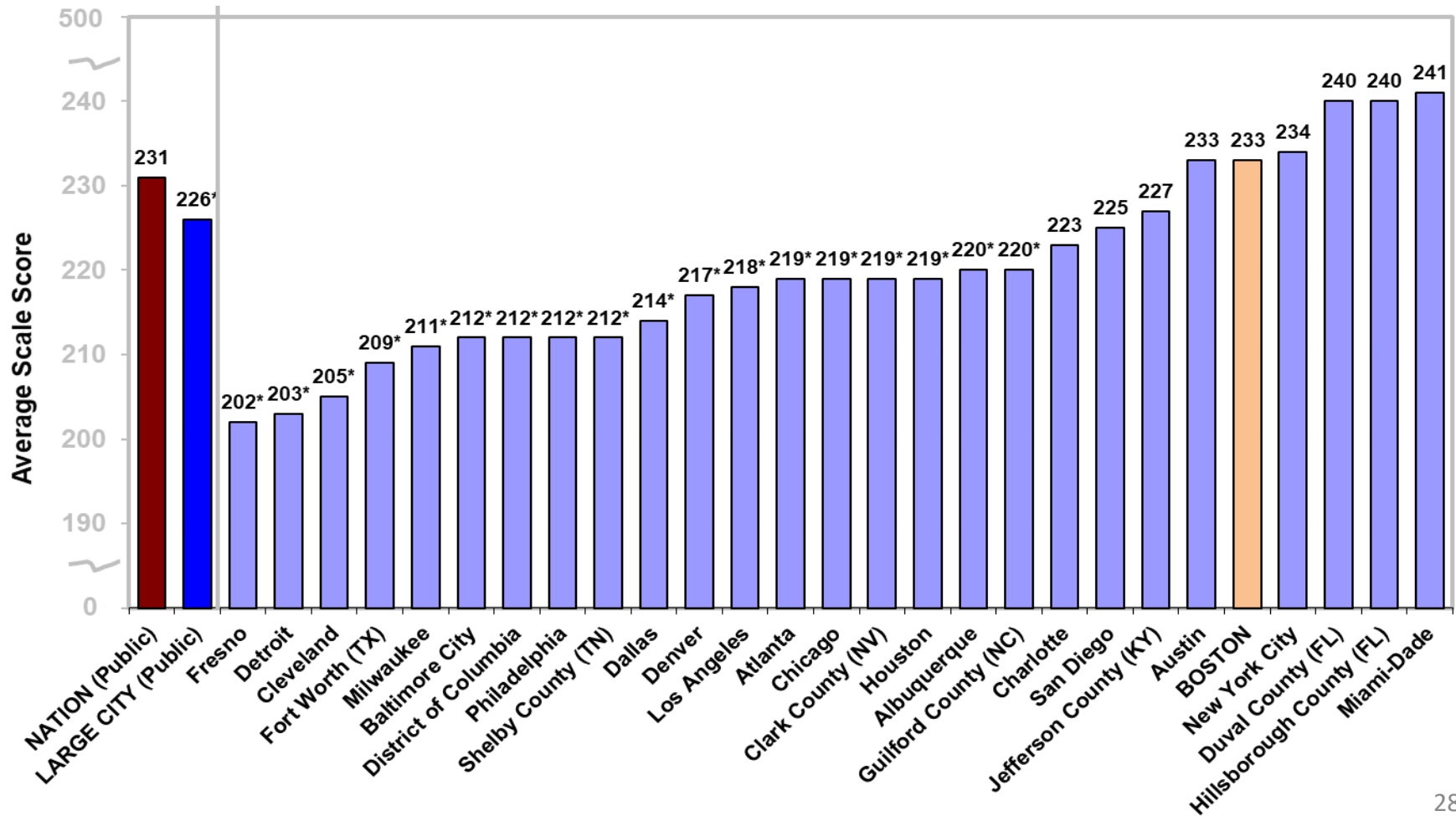
2017 Reading Average Scale Score Comparisons: Boston and Nation, Large City & TUDA Districts



# 8<sup>th</sup> grade Reading: Students with disabilities

## Grade 8 Students with Disabilities

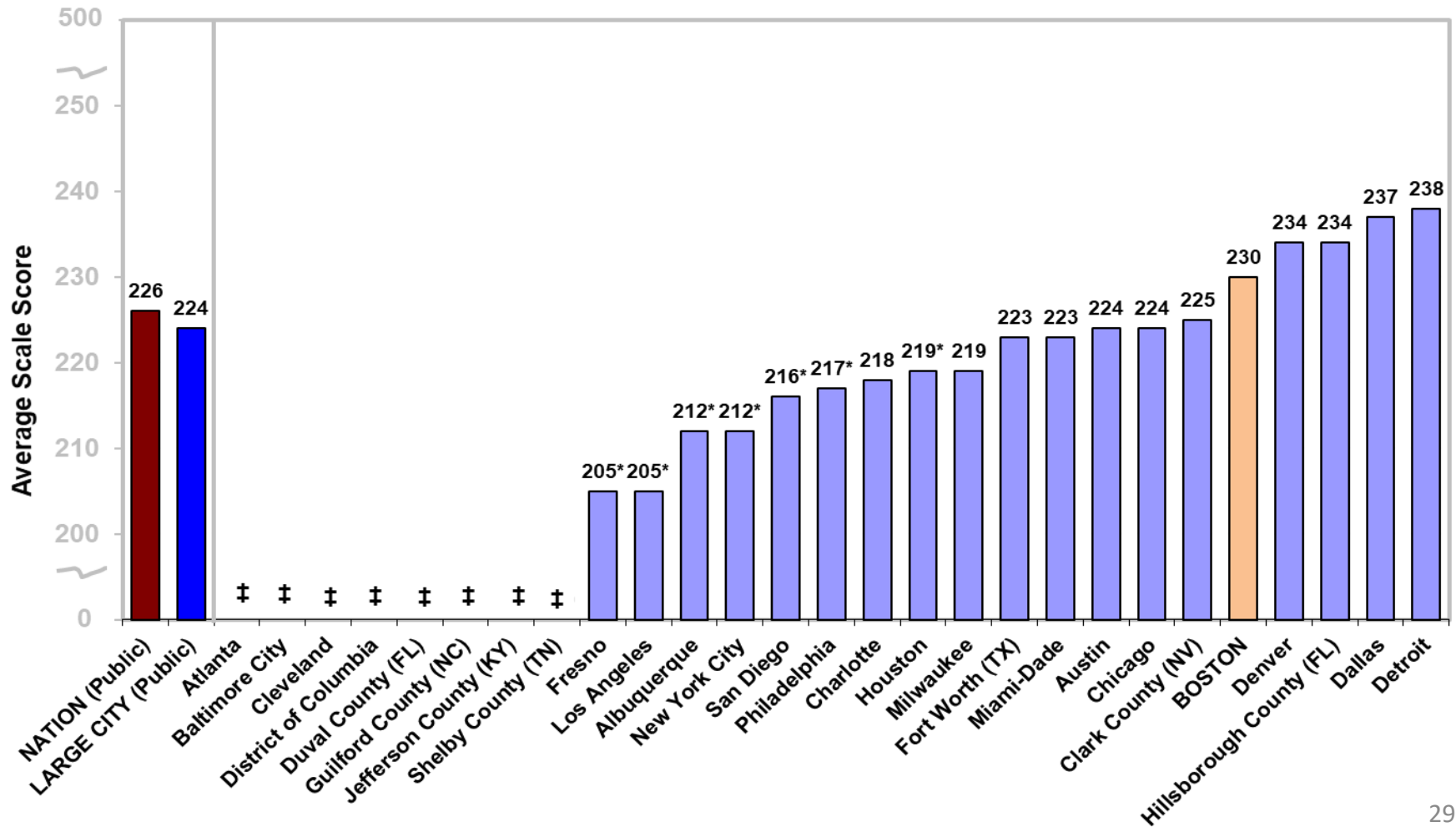
2017 Reading Average Scale Score Comparisons: Boston and Nation, Large City & TUDA Districts



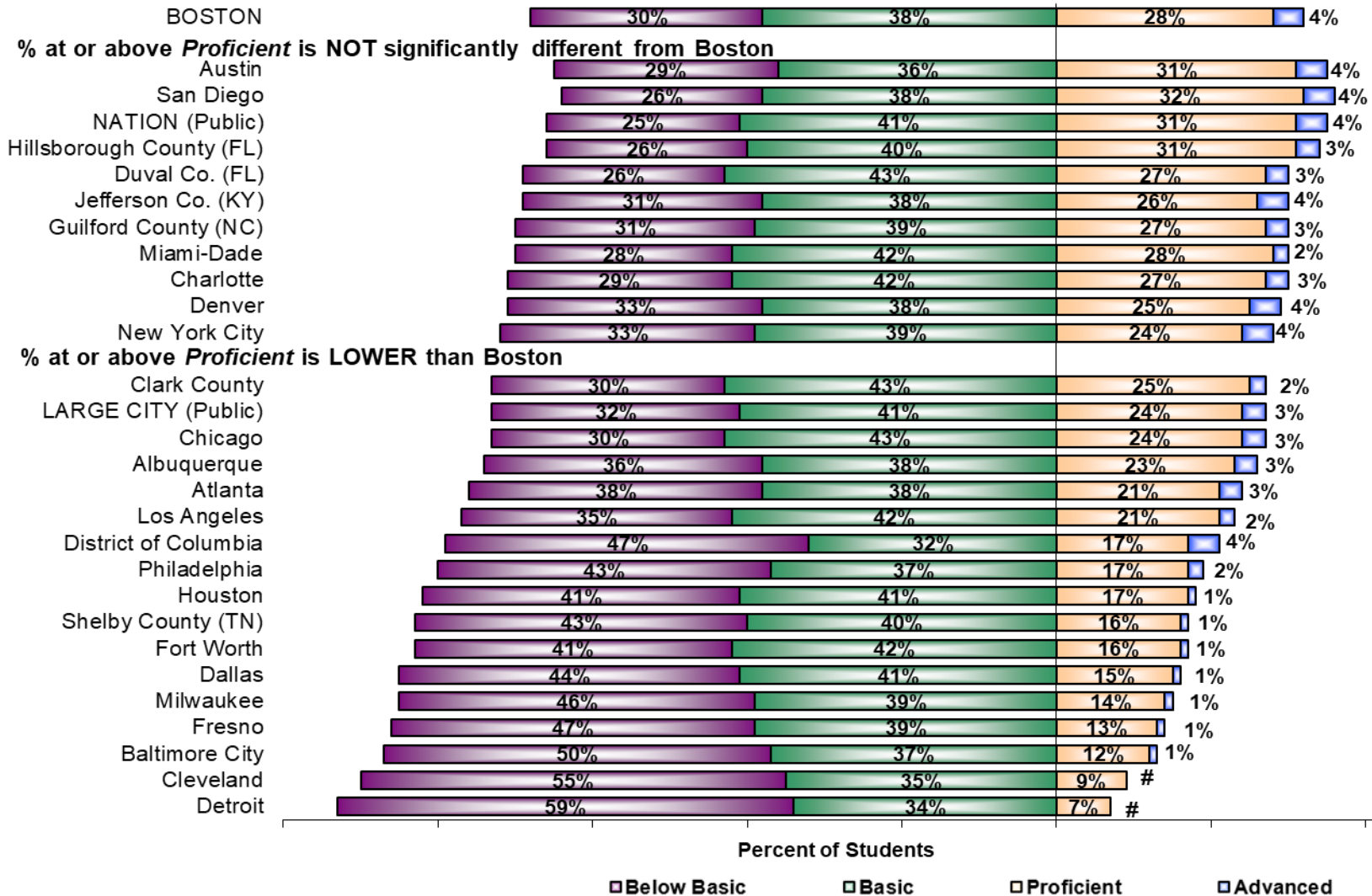
# 8<sup>th</sup> grade Reading: English Learners

## Grade 8 English Language Learners

2017 Reading Average Scale Score Comparisons: Boston and Nation, Large City & TUDA Districts

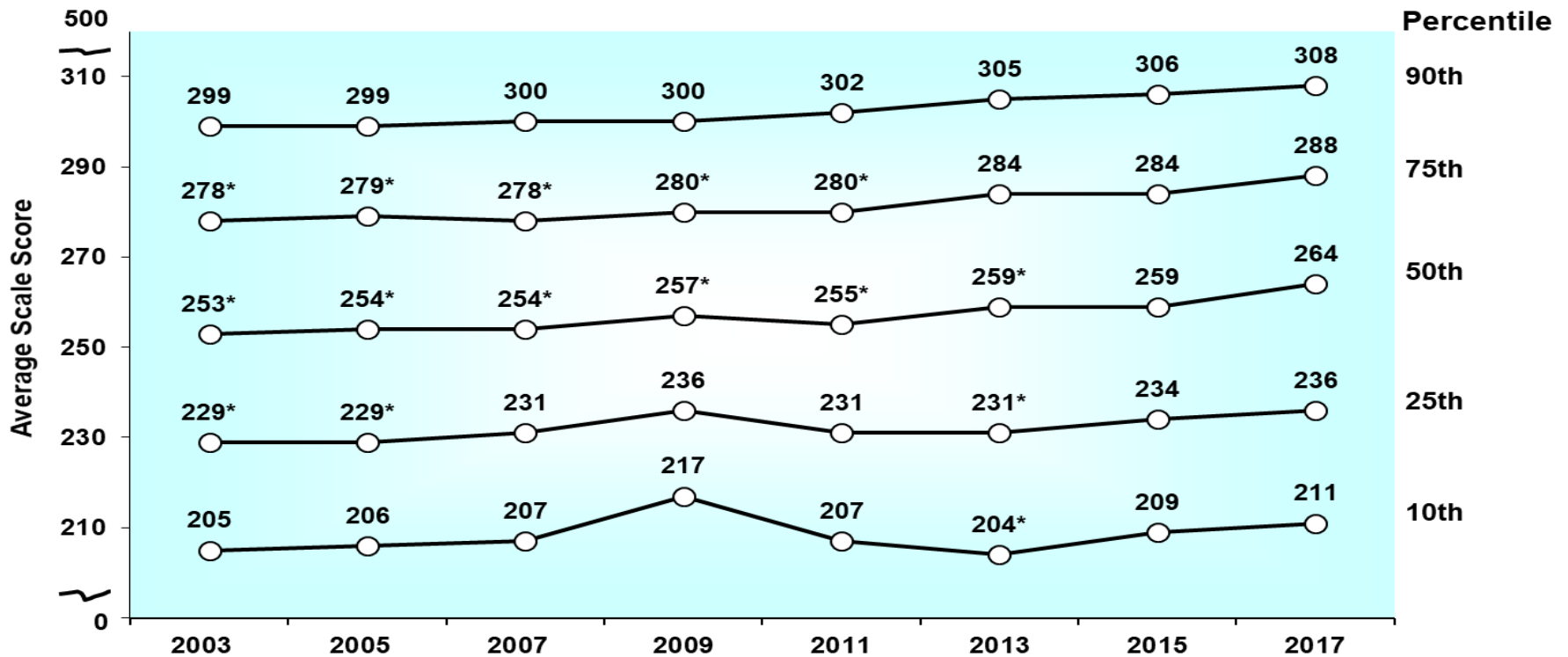


# 8<sup>th</sup> grade Reading: At or above Proficient



# 8<sup>TH</sup> GRADE READING 2003 – 2017, PERCENTILE BANDS

**Trend in Grade 8 Reading Percentile Scores**

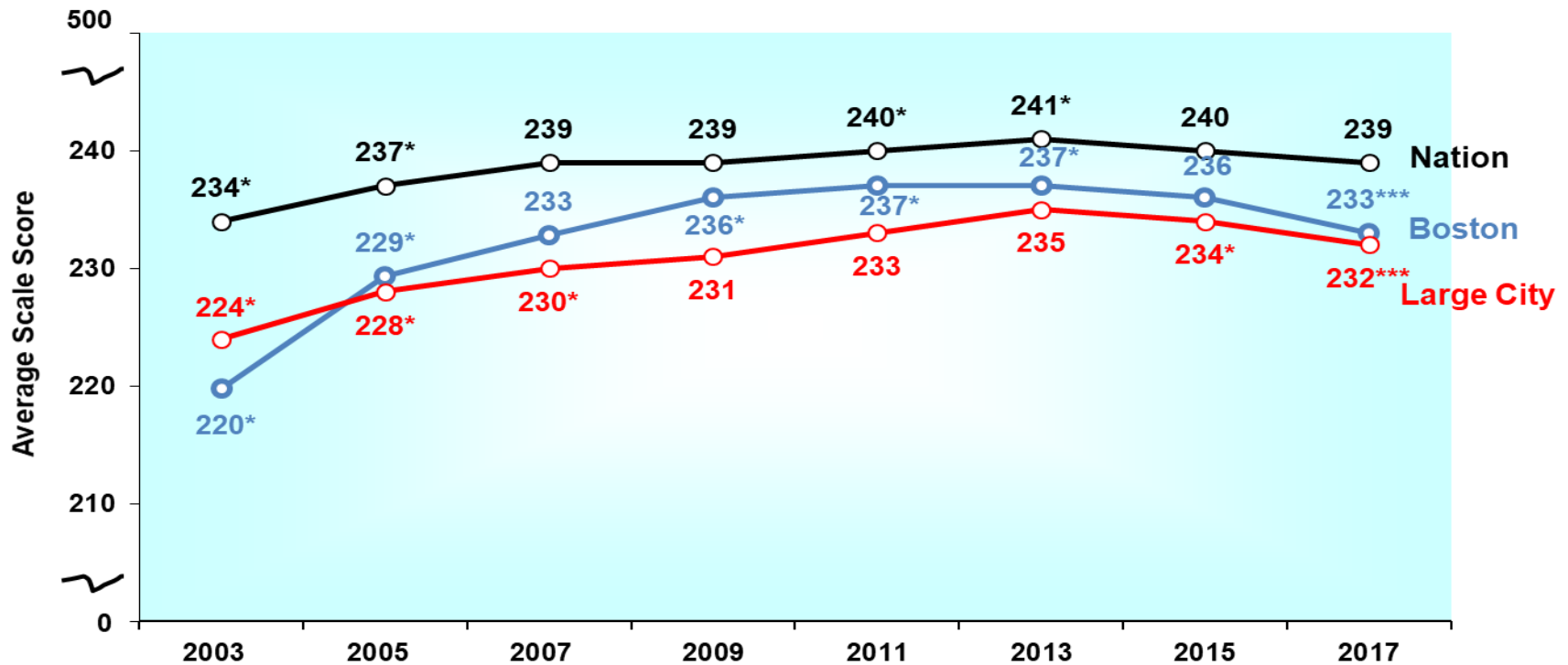


NOTE: The NAEP Reading scale ranges from 0 to 500.

\* Significantly different ( $P < .05$ ) from 2017.

# 4<sup>th</sup> GRADE MATHEMATICS 2003 -2017

**Grade 4 Mathematics  
Average scale scores: 2003-2017**

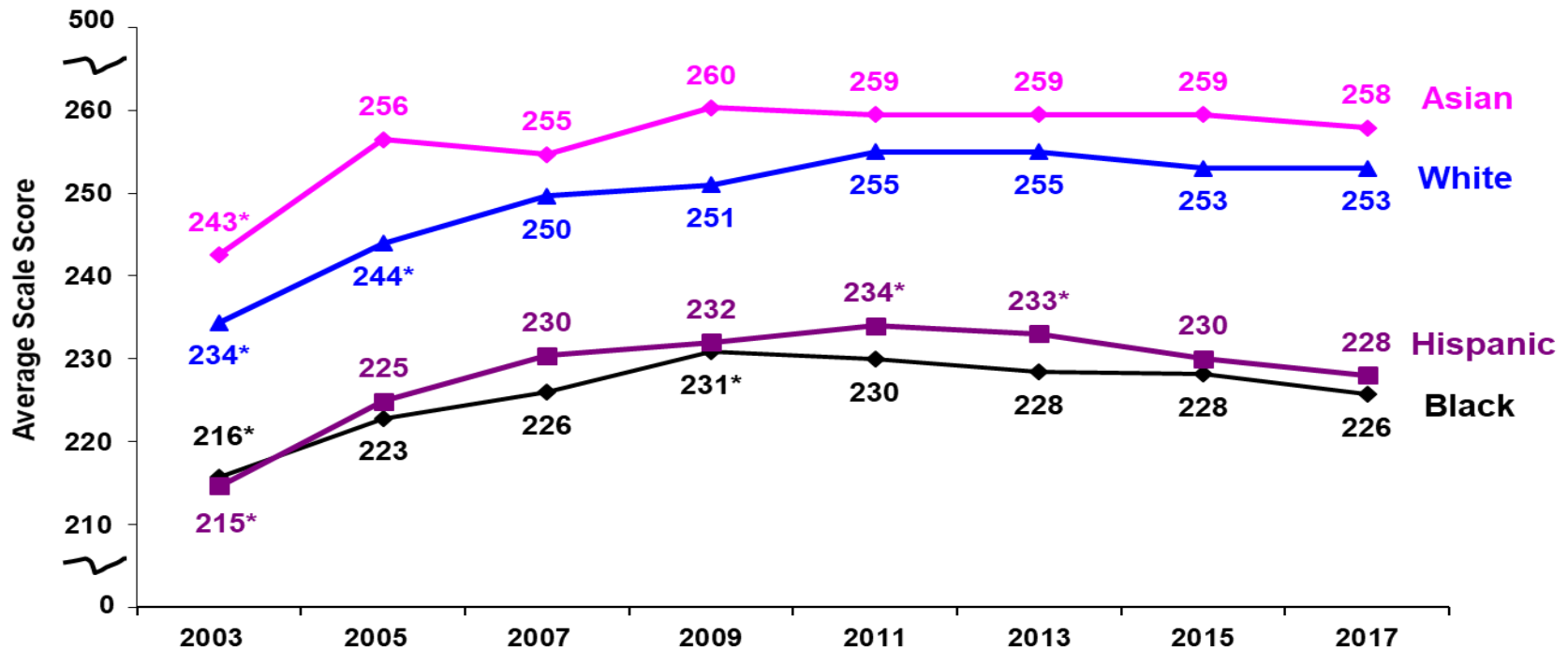


NOTE: The NAEP Mathematics scale ranges from 0 to 500.  
 \* Significantly different ( $P < .05$ ) from 2017.  
 \*\* Significantly different ( $P < .05$ ) from Large City in 2017.  
 \*\*\* Significantly different ( $P < .05$ ) from Nation in 2017.



# 4<sup>TH</sup> GRADE MATH 2003 – 2017, SUBGROUPS

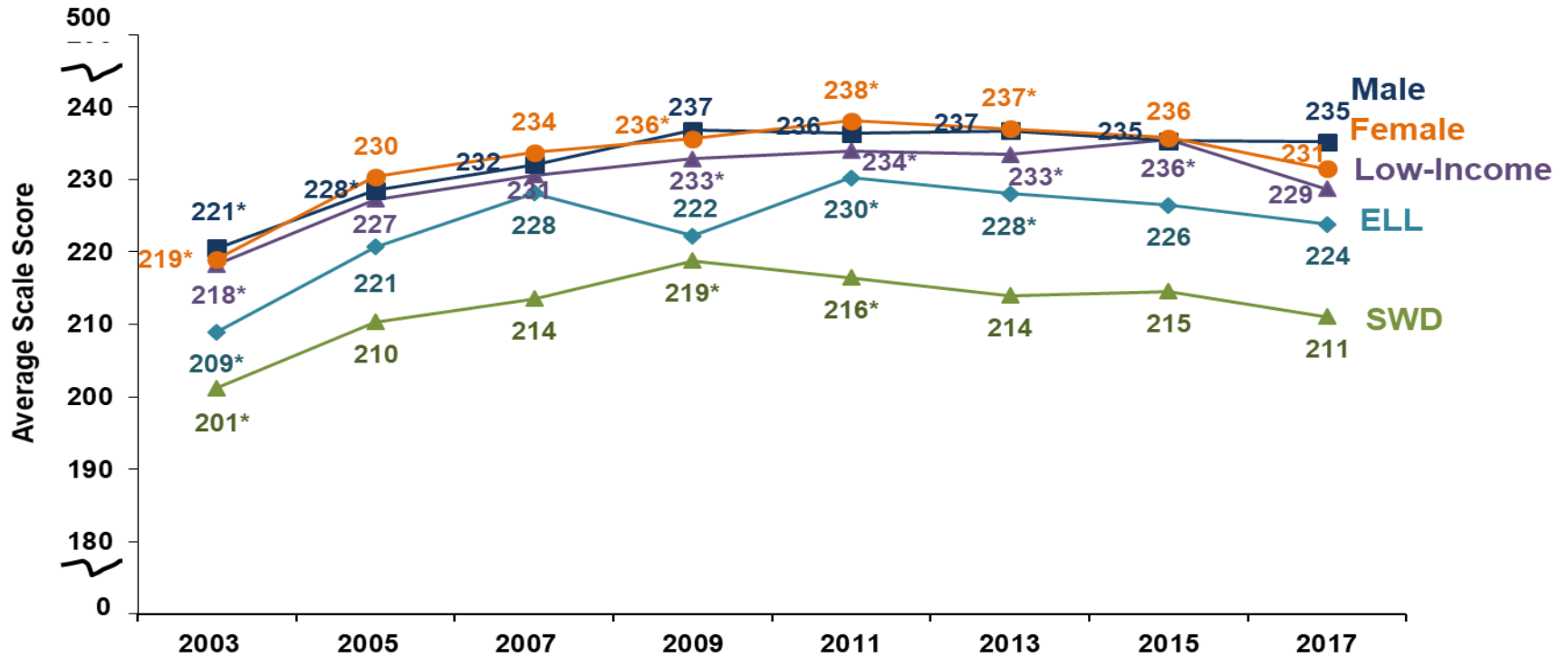
**Grade 4 Mathematics by Race/Ethnicity**  
Average scale scores: 2003-2017



NOTE: The NAEP Mathematics scale ranges from 0 to 500.  
\* Significantly different ( $P < .05$ ) from 2017.

# 4<sup>TH</sup> GRADE MATH 2003 – 2017, SUBGROUPS

**Grade 4 Mathematics by Other Subgroup**  
Average scale scores: 2003-2017

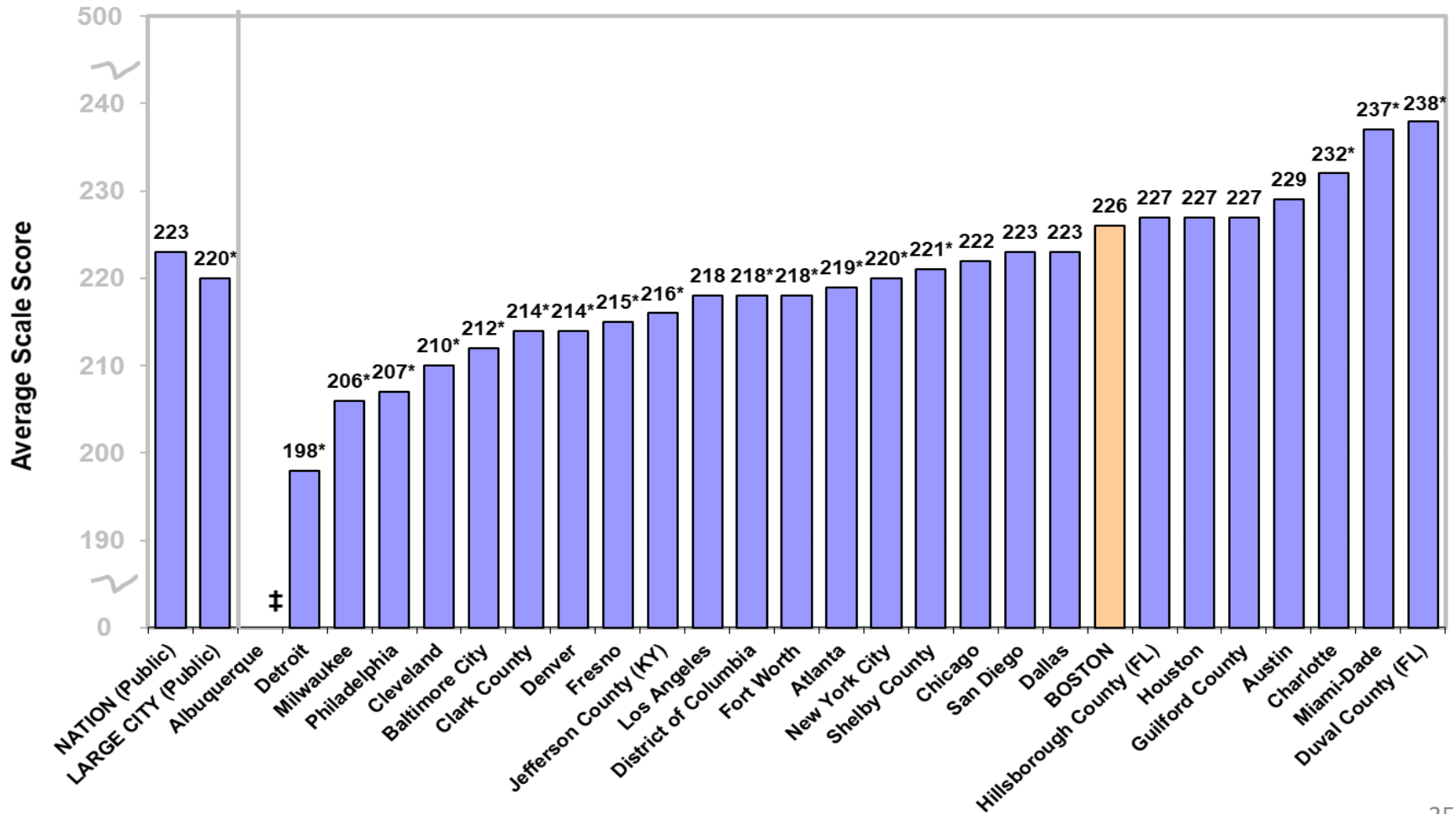


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\* Significantly different (P < .05) from 2017.

# 4<sup>th</sup> grade Math: African-American student performance

## Grade 4 Black Students

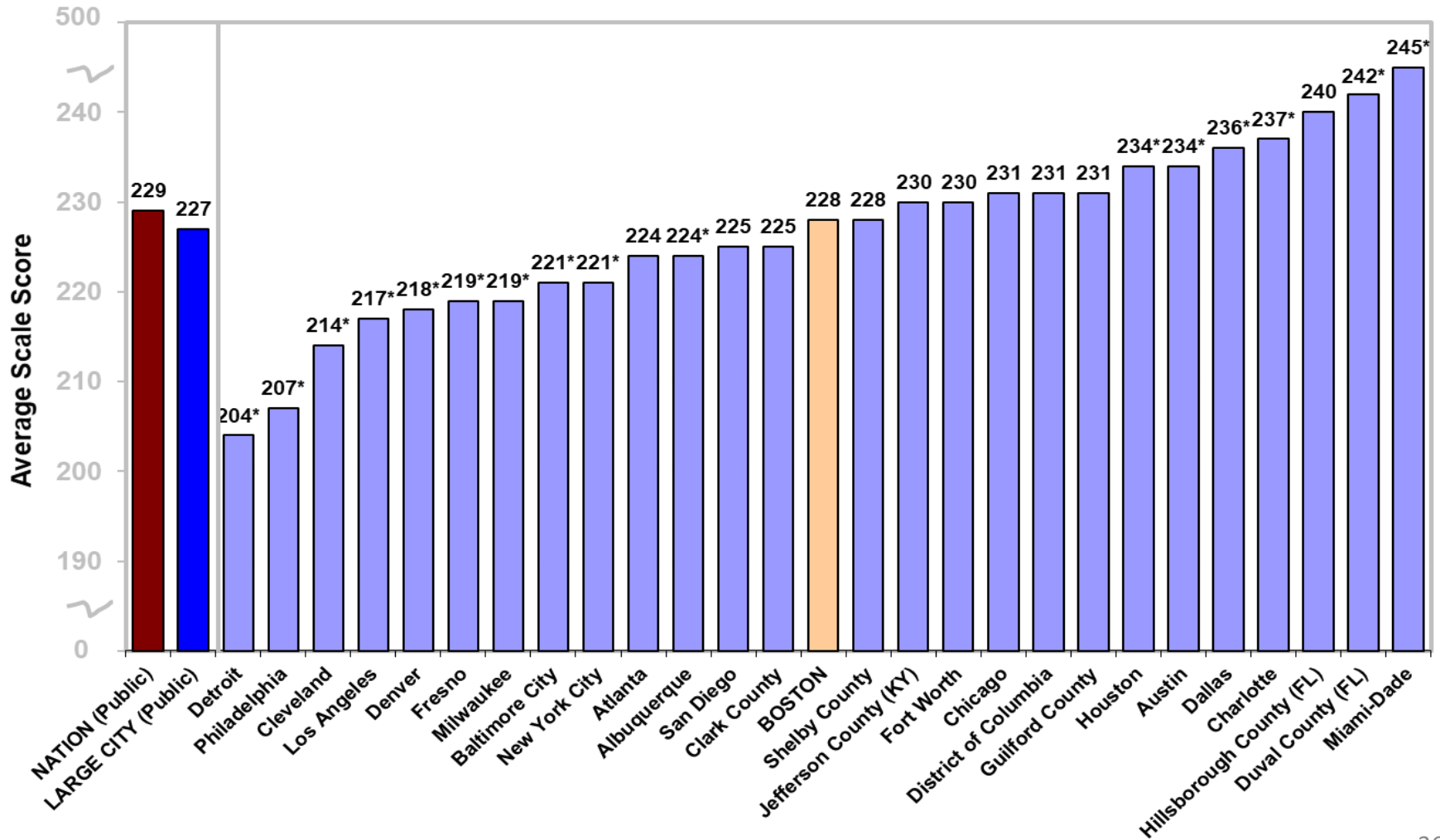
2017 Mathematics Average Scale Score Comparisons Boston and Nation, Large City & TUDA Districts



# 4<sup>th</sup> grade Math: Latino student performance

## Grade 4 Hispanic Students

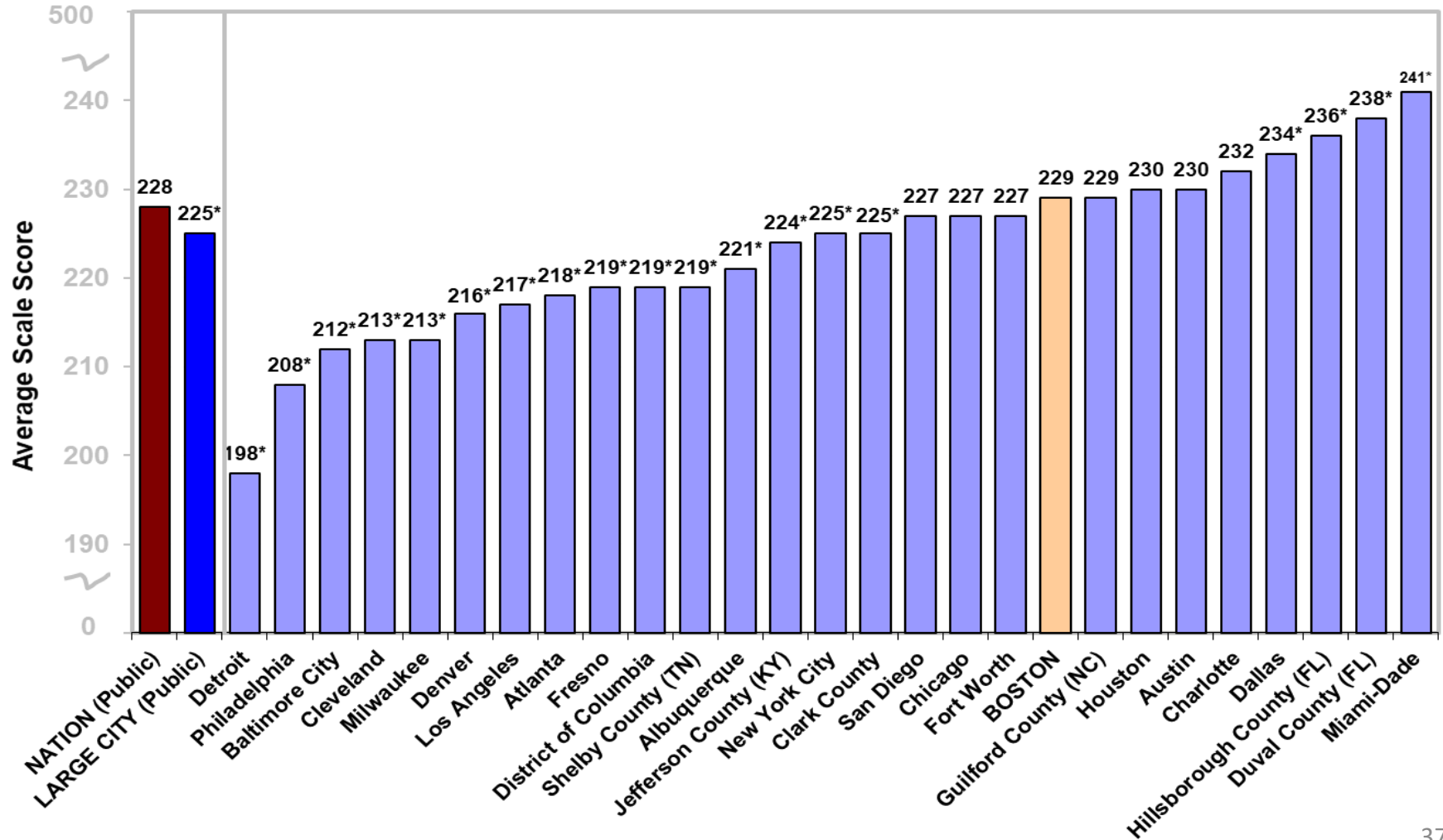
### 2017 Mathematics Average Scale Score Comparisons Boston and Nation, Large City & TUDA Districts



# 4<sup>th</sup> grade Math: Low Income Students

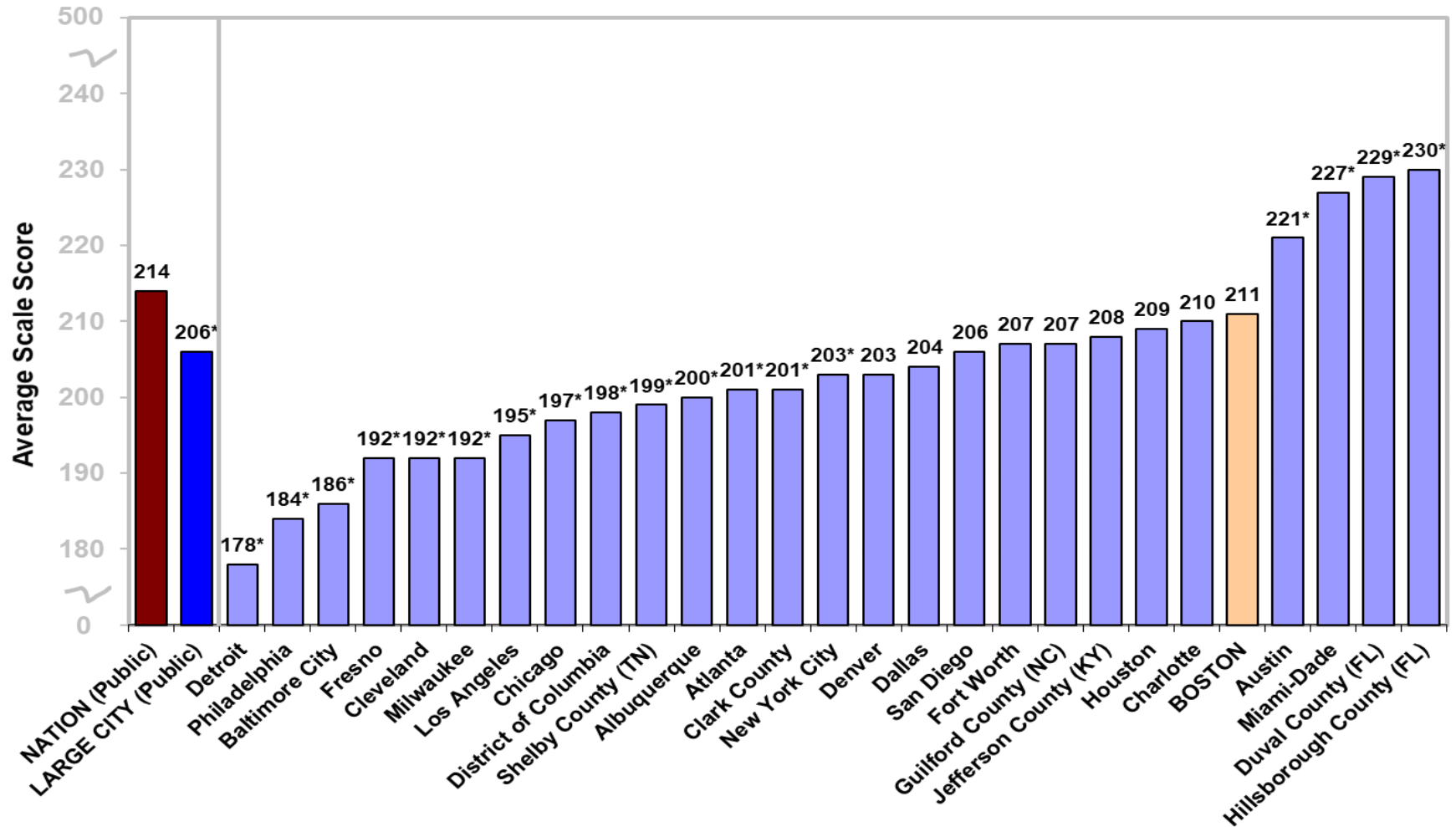
## Grade 4 Low-Income Students

2017 Mathematics Average Scale Score Comparisons Boston and Nation, Large City & TUDA Districts



# 4<sup>th</sup> grade Math: Students with Disabilities

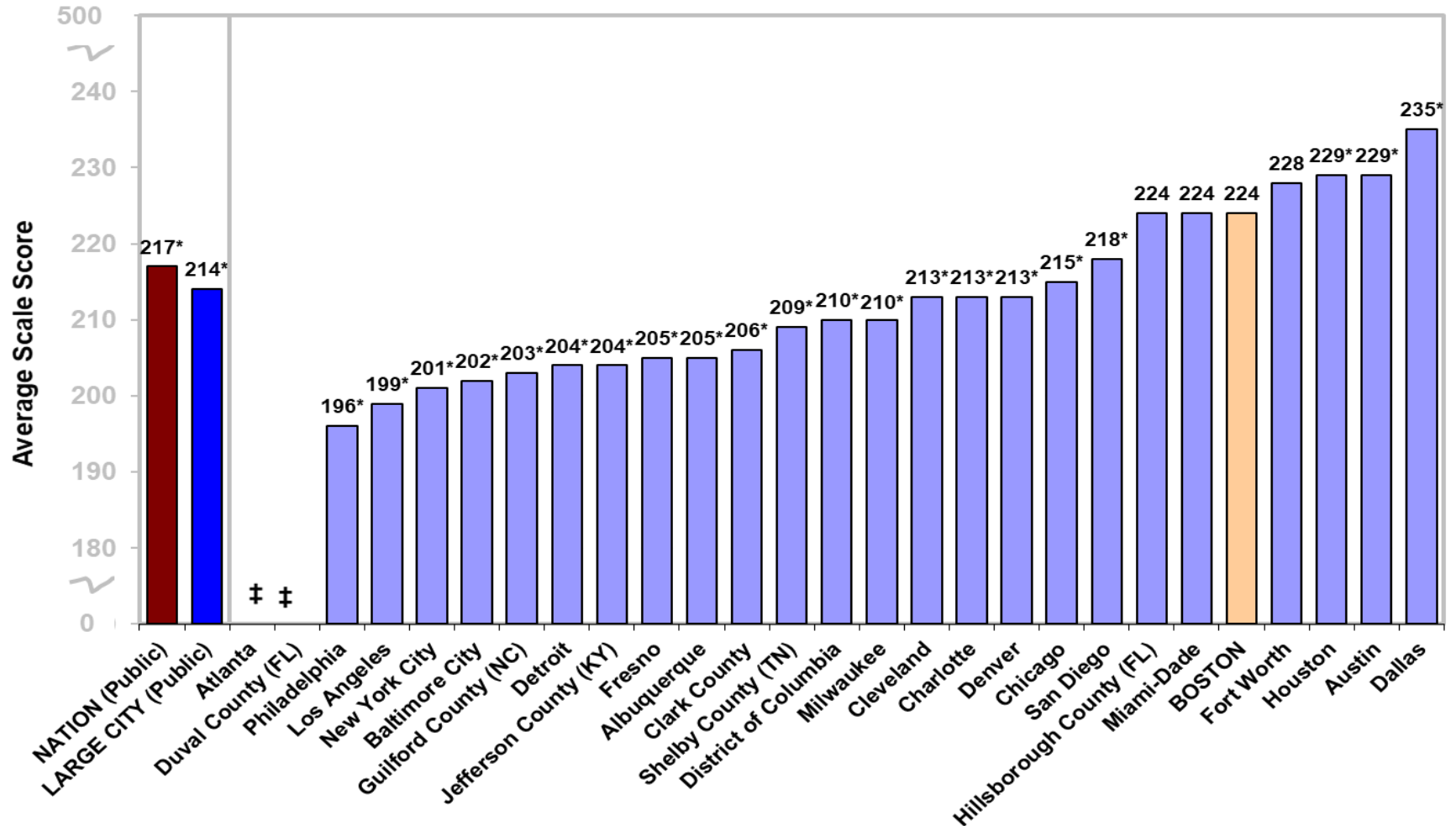
**Grade 4 Students with Disabilities**  
**2017 Mathematics Average Scale Score Comparisons Boston and Nation, Large City & TUDA Districts**



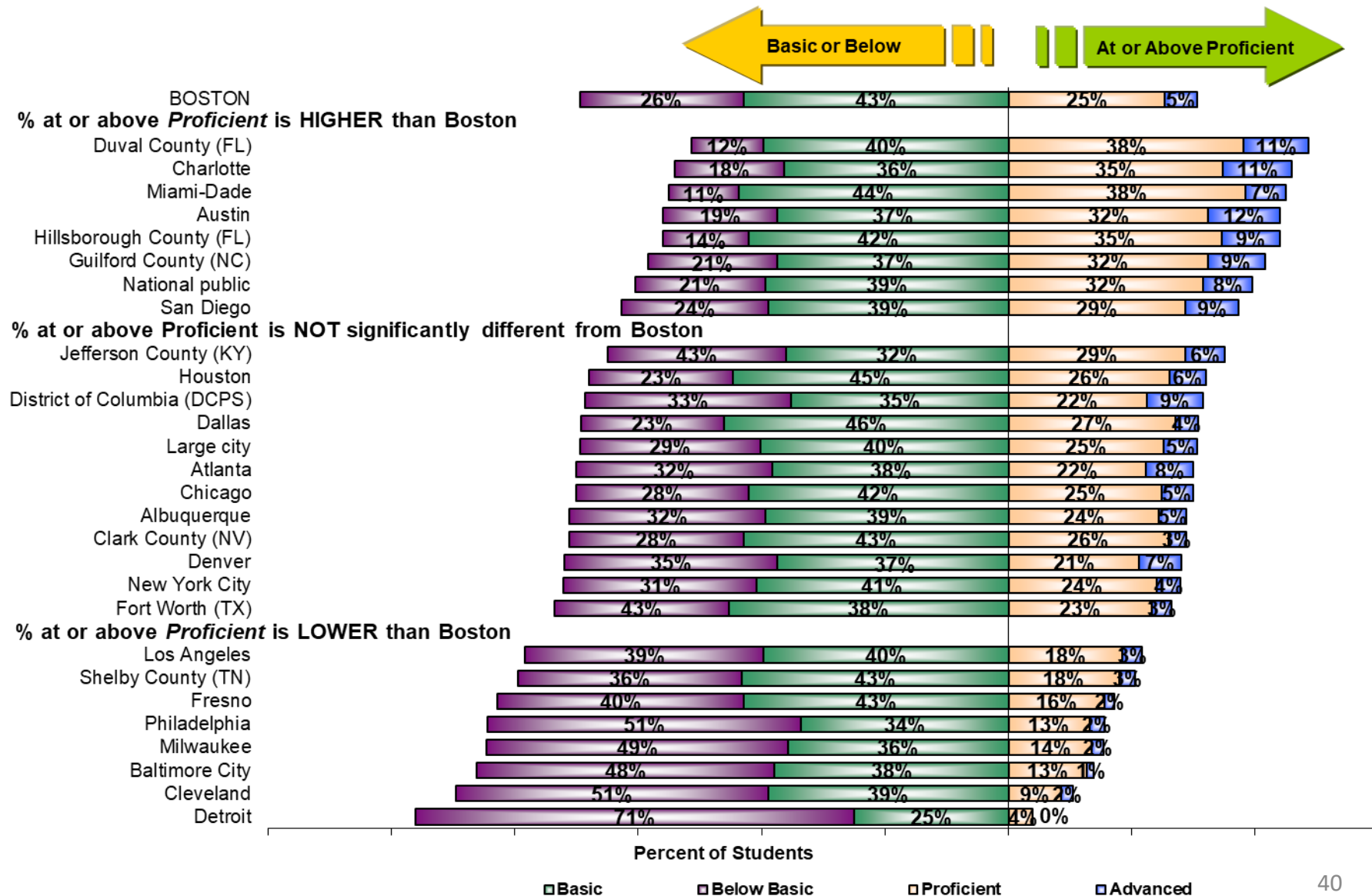
# 4<sup>th</sup> grade Math: English Language Learners

## Grade 4 English Language Learners

### 2017 Mathematics Average Scale Score Comparisons Boston and Nation, Large City & TUDA Districts



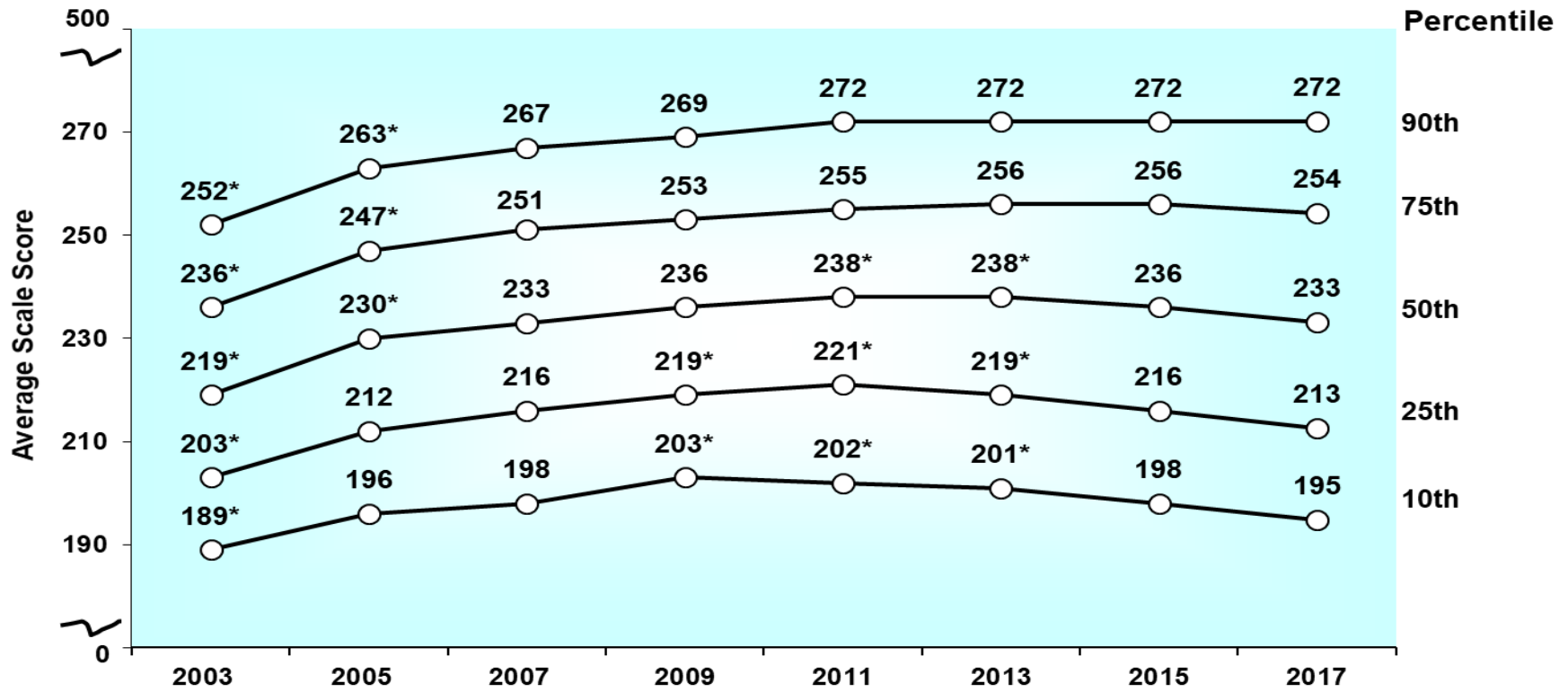
# 4<sup>th</sup> grade Math: At or above Proficient





# 4<sup>TH</sup> GRADE MATH 2003 – 2017, PERCENTILE BANDS

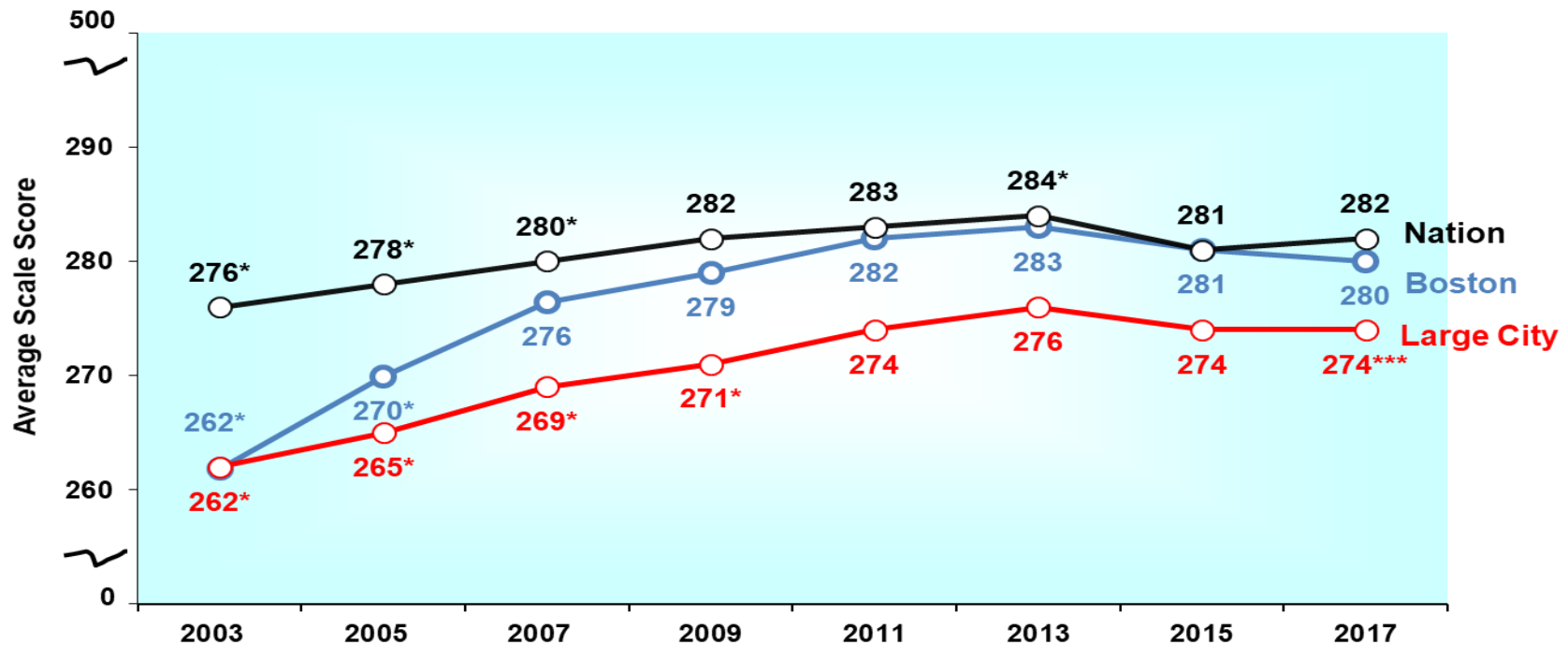
**Trend in Grade 4 Mathematics Percentile Scores**



NOTE: The NAEP Mathematics scale ranges from 0 to 500.  
\* Significantly different (P<.05) from 2017.

# 8<sup>TH</sup> GRADE MATHEMATICS 2003 - 2017

**Grade 8 Mathematics**  
Average scale scores: 2003-2017



NOTE: The NAEP Mathematics scale ranges from 0 to 500.

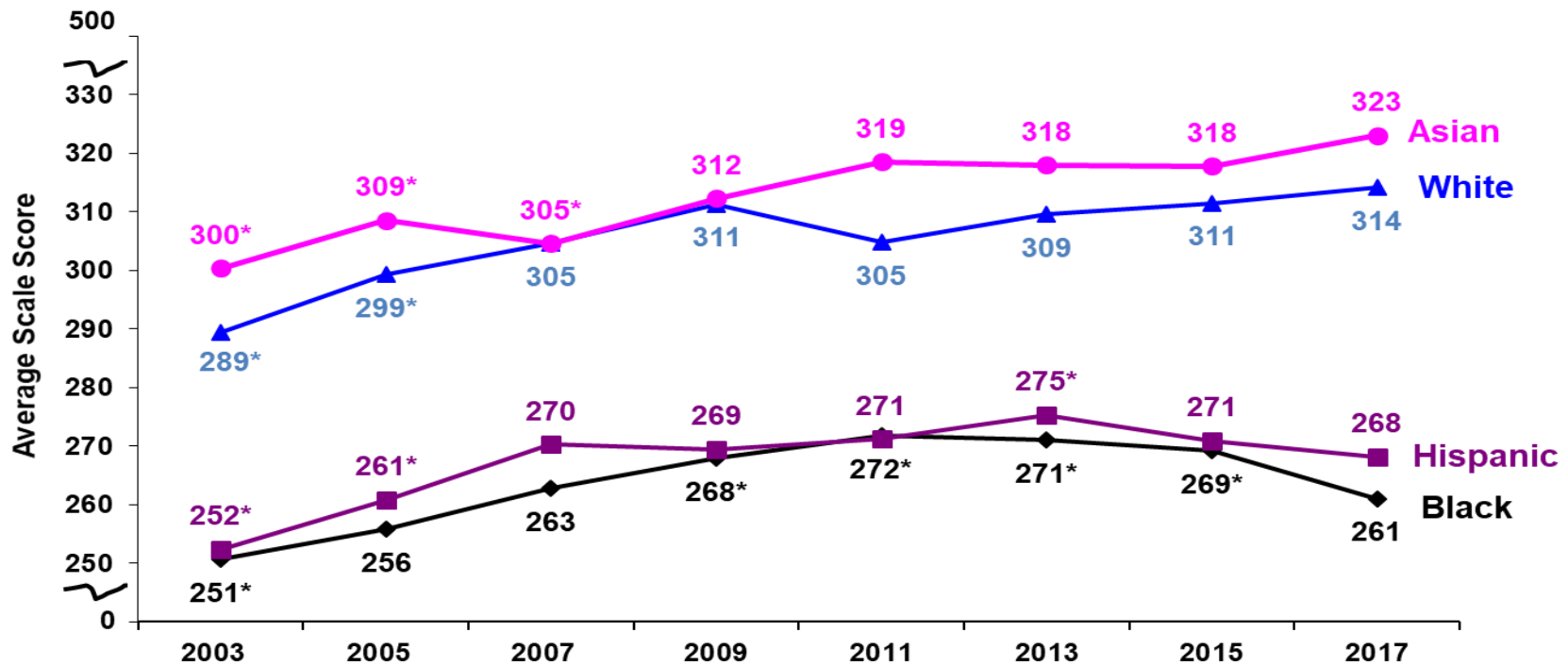
\* Significantly different (P < .05) from 2017.

\*\* Significantly different (P < .05) from Large City in 2017.

\*\*\* Significantly different (P < .05) from Nation in 2017.

# 8<sup>TH</sup> GRADE MATH 2003 – 2017, SUBGROUPS

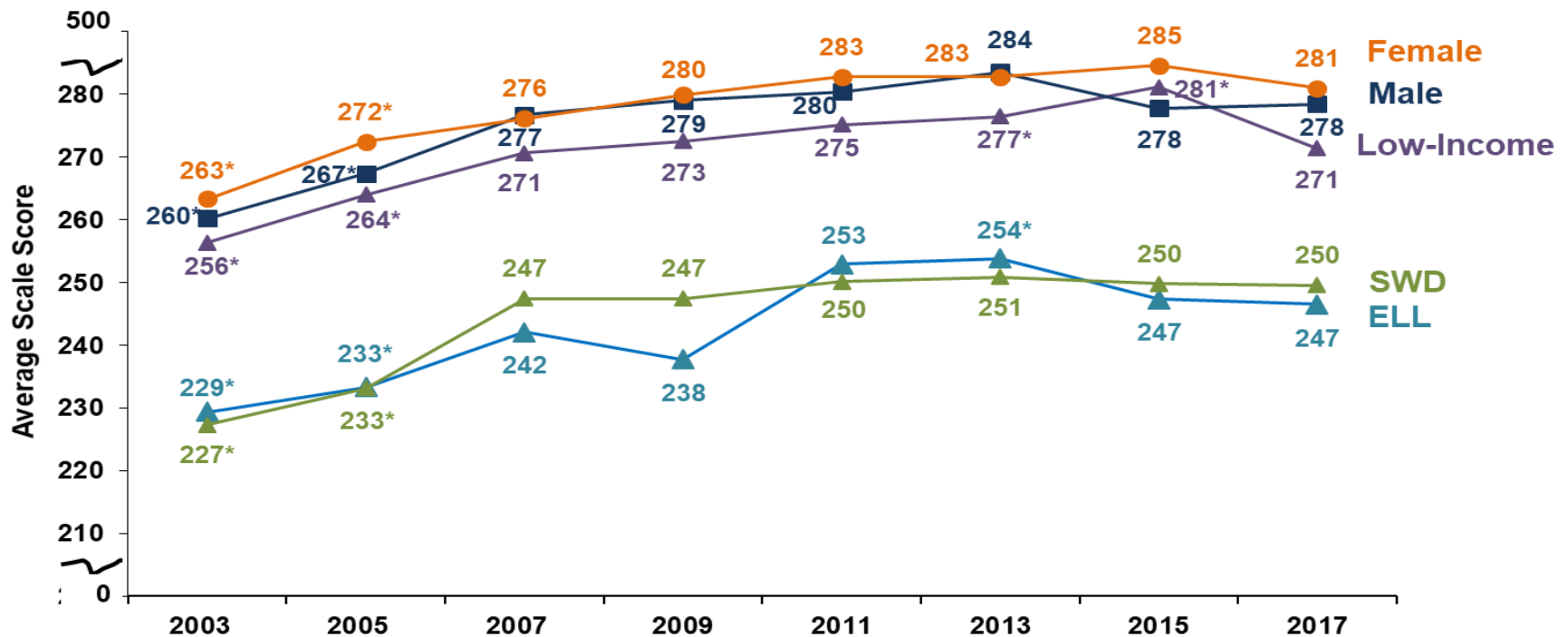
**Grade 8 Mathematics by Race/Ethnicity**  
Average scale scores: 2003-2017



NOTE: The NAEP Mathematics scale ranges from 0 to 500.  
\* Significantly different ( $P < .05$ ) from 2017.

# 8<sup>TH</sup> GRADE MATH 2003 – 2017, SUBGROUPS

**Grade 8 Mathematics by Other Subgroup**  
Average scale scores: 2003-2017



NOTE: The NAEP Reading scale ranges from 0 to 500.

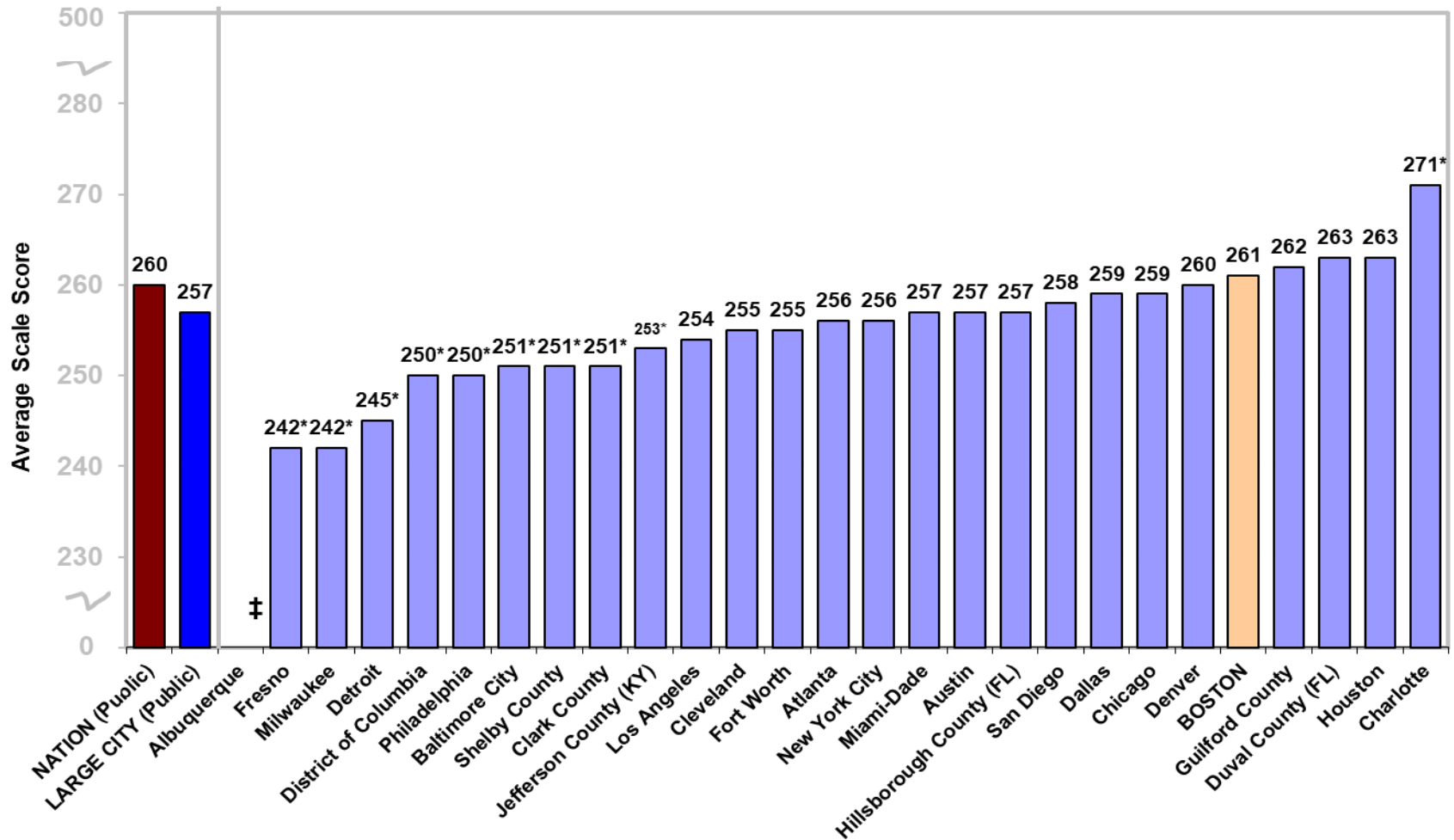
\* Significantly different ( $P < .05$ ) from 2017.

‡ A significance test could not be performed because reporting standards were not met

# 8<sup>TH</sup> GRADE MATHEMATICS 2017 - SUBGROUPS

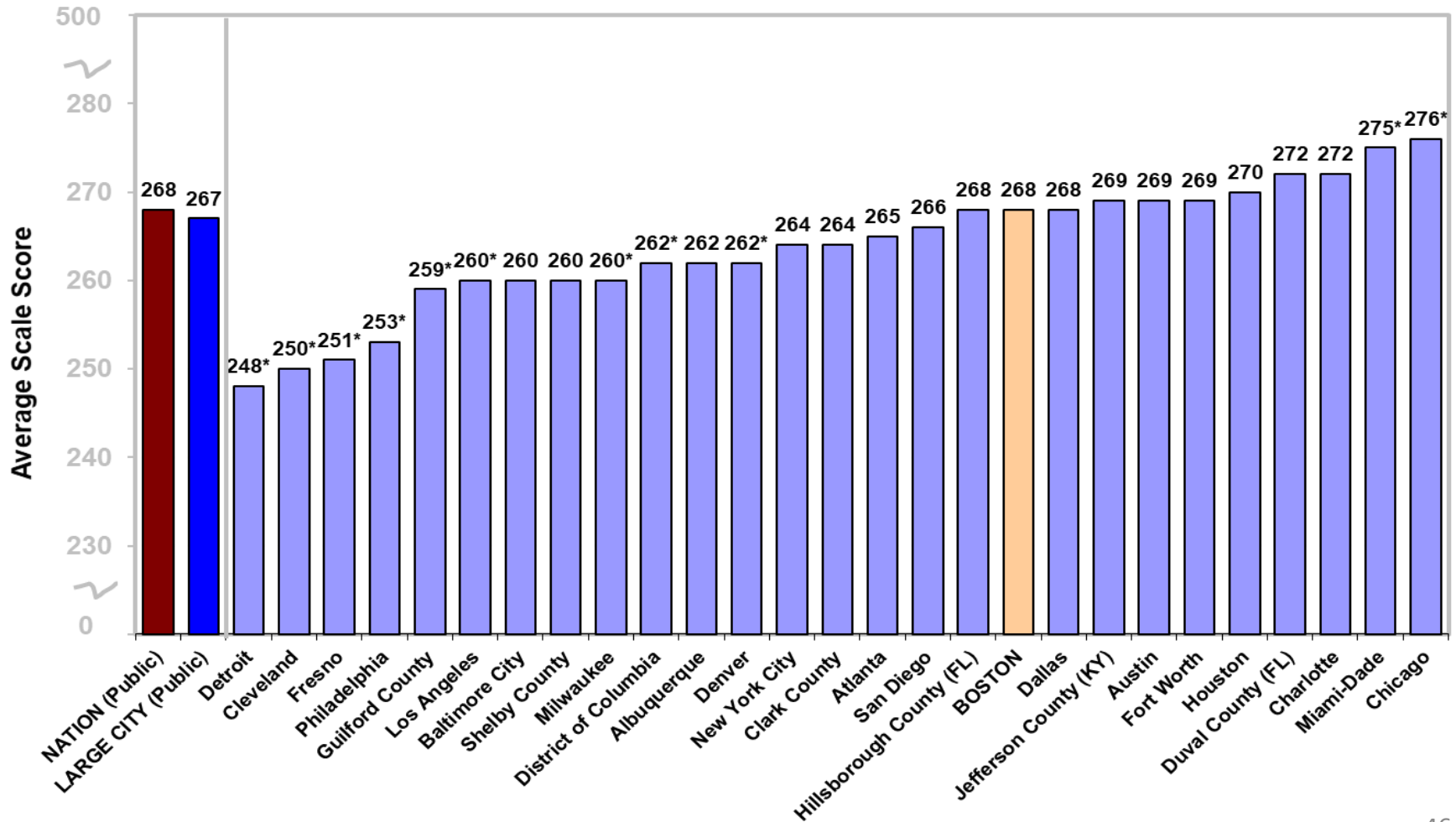
## Grade 8 Black Students

2017 Mathematics Average Scale Score Comparisons Boston and Nation, Large City & TUDA Districts



# 8<sup>th</sup> grade Math: Latino student performance

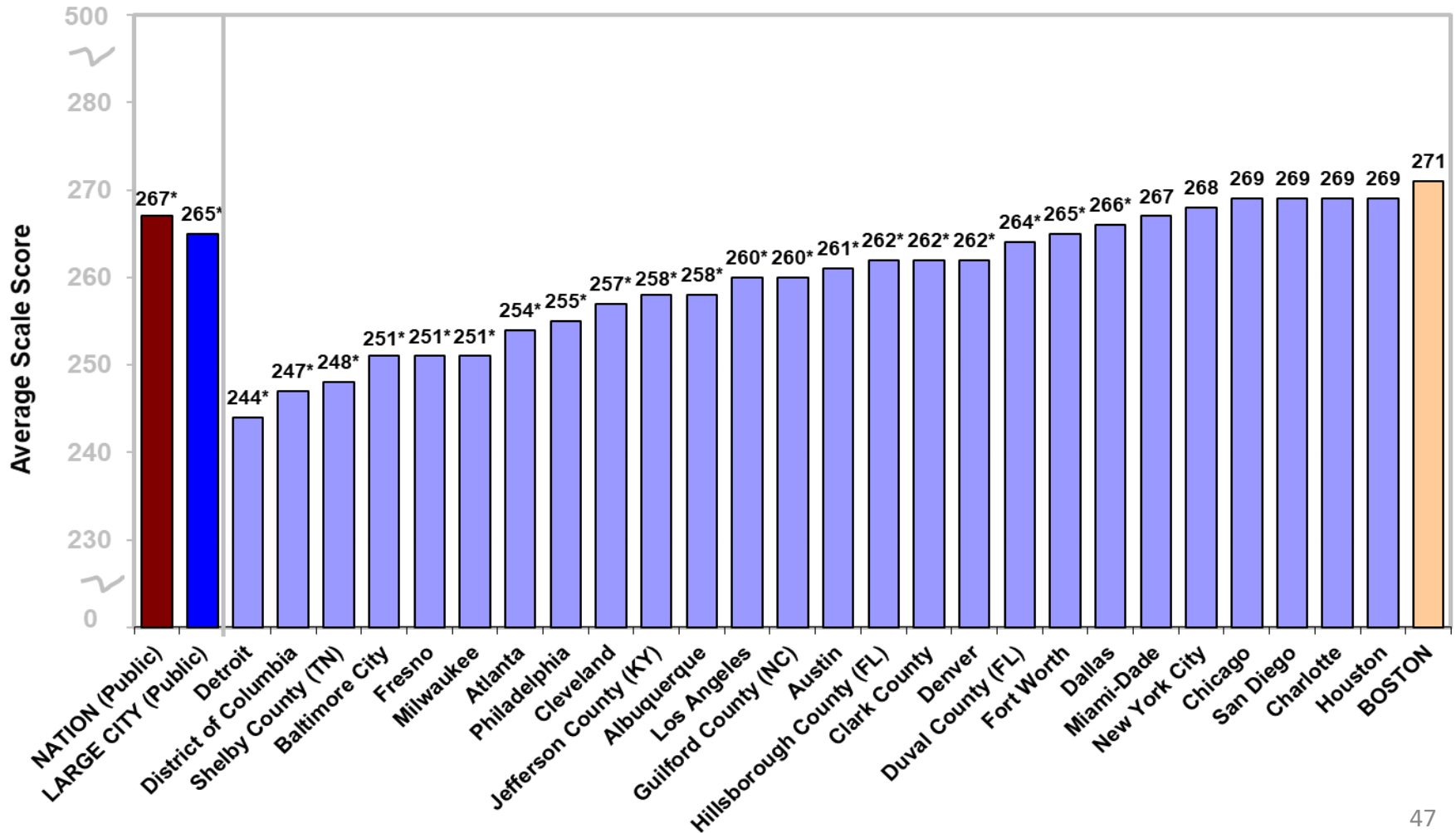
Grade 8 Hispanic Students  
 2017 Mathematics Average Scale Score Comparisons Boston and Nation, Large City & TUDA Districts



# 8<sup>th</sup> grade Math: Low Income Students

## Grade 8 Low-Income Students

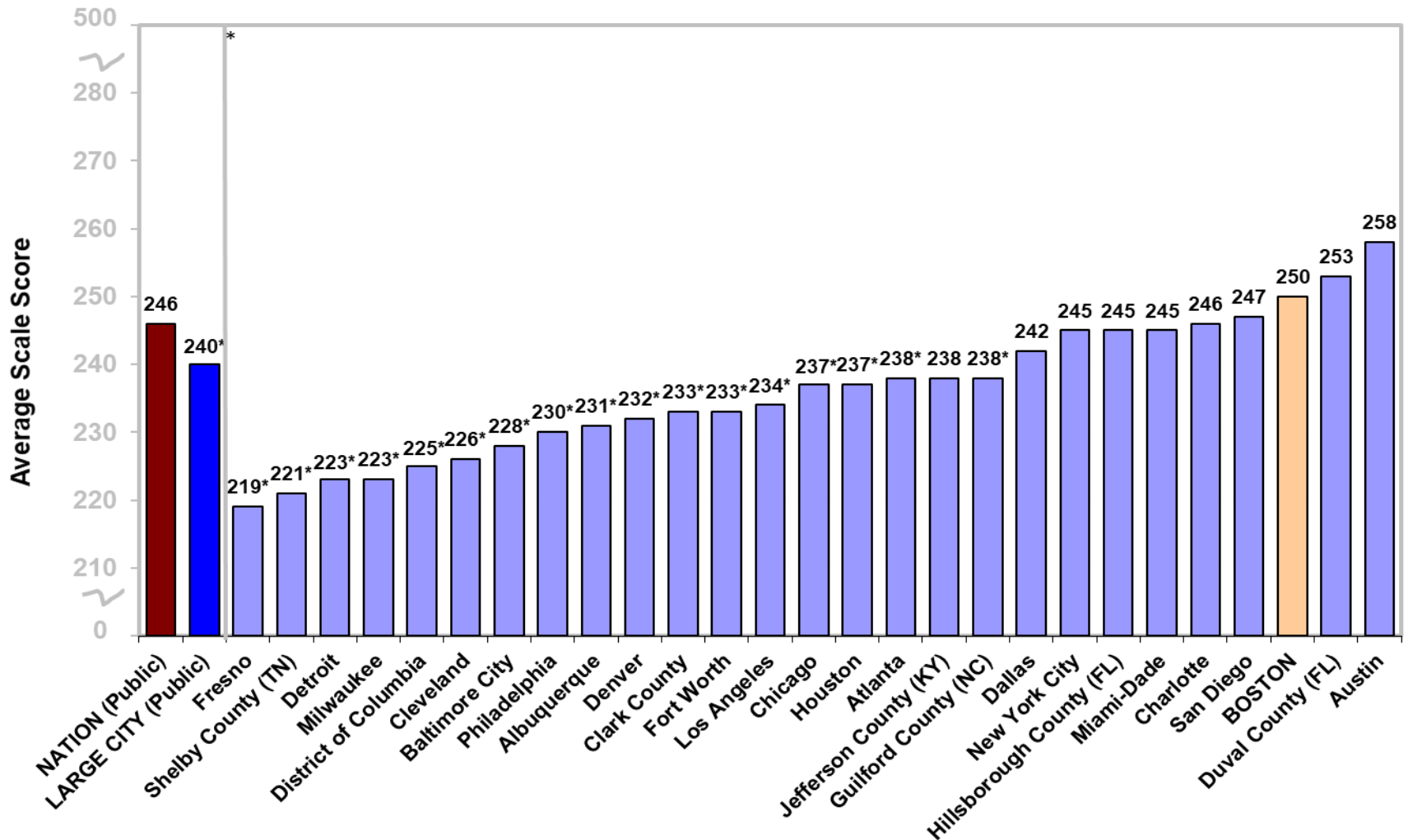
2017 Mathematics Average Scale Score Comparisons Boston and Nation, Large City & TUDA Districts



# 8<sup>th</sup> grade Math: Students with disabilities

## Grade 8 Students with Disabilities

2017 Mathematics Average Scale Score Comparisons Boston and Nation, Large City & TUDA Districts

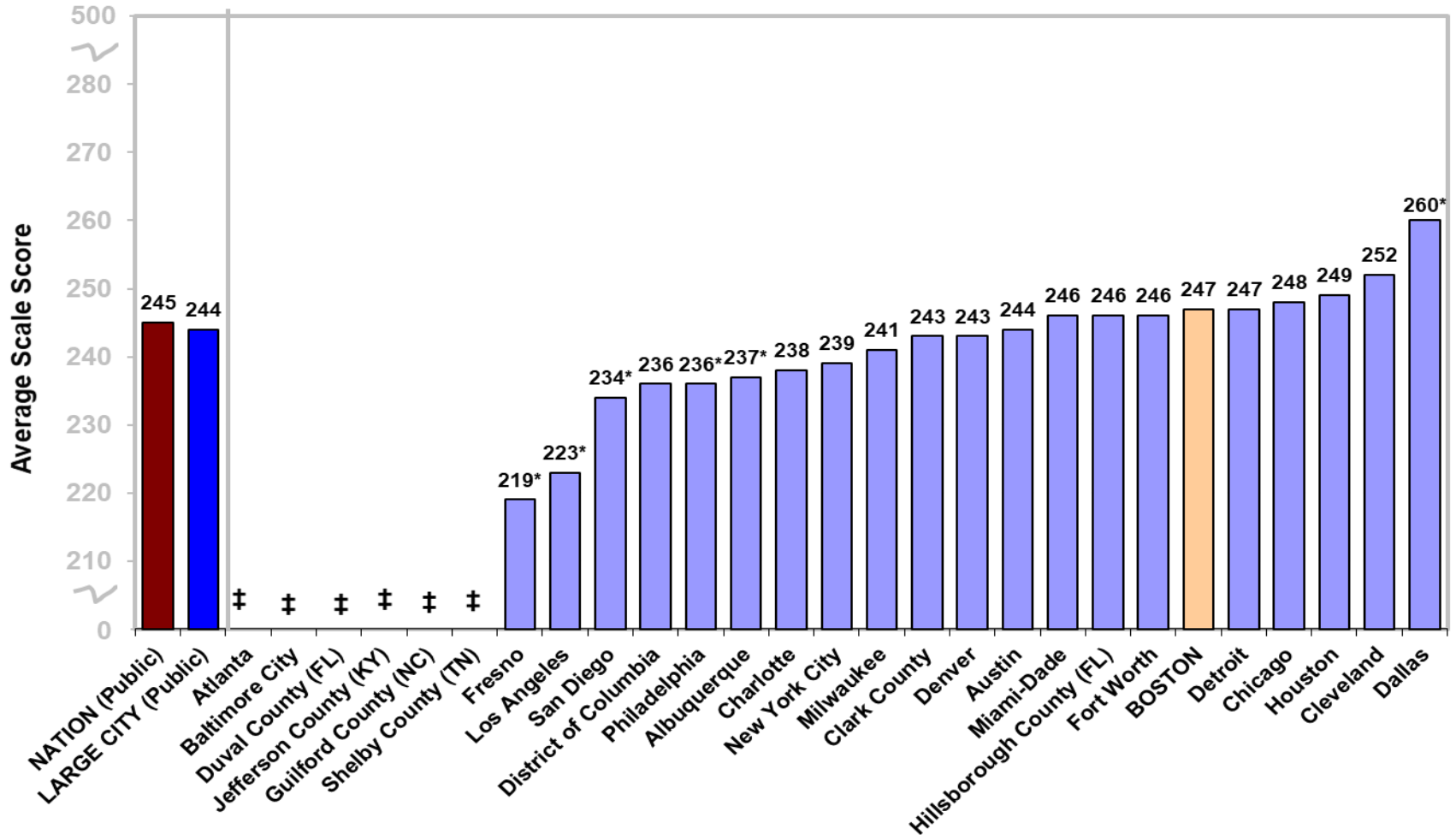




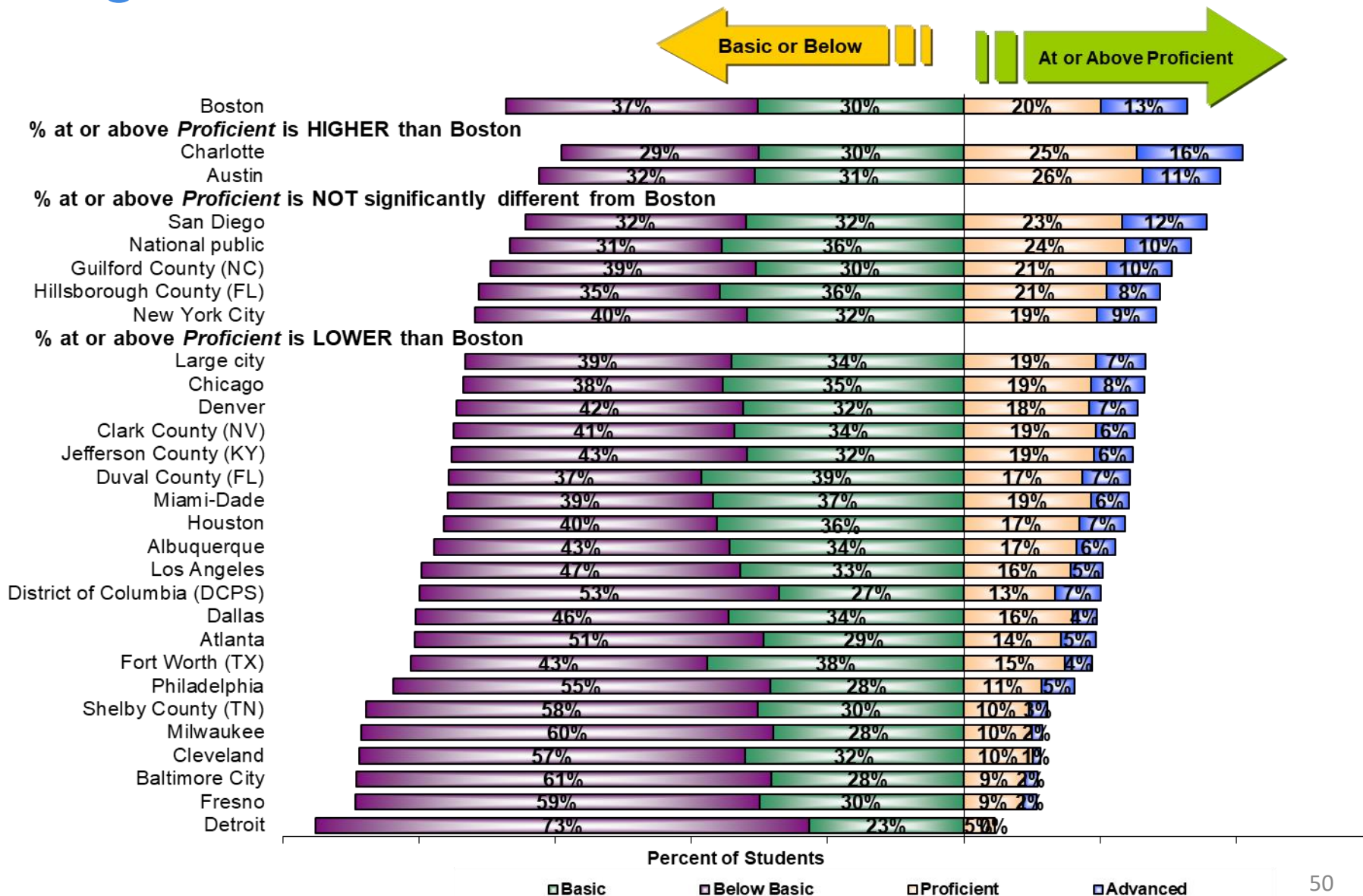
# 8<sup>th</sup> grade Math: English Language Learners

## Grade 8 English Language Learners

2017 Mathematics Average Scale Score Comparisons Boston and Nation, Large City & TUDA Districts

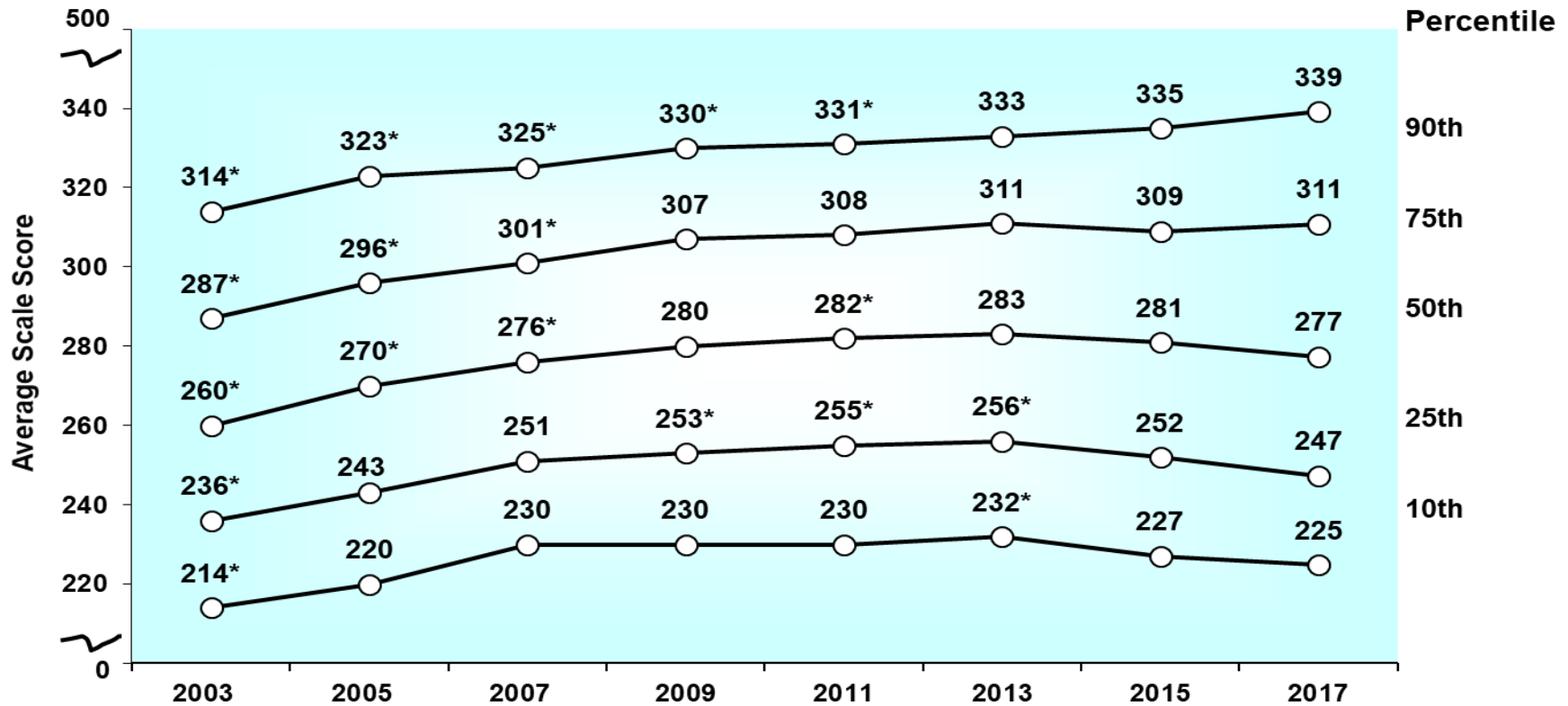


# 8<sup>th</sup> grade Math: At or Above Proficient



# 8<sup>TH</sup> GRADE MATH 2003 – 2017, PERCENTILE BANDS

## Trend in Grade 8 Mathematics Percentile Scores



NOTE: The NAEP Mathematics scale ranges from 0 to 500.

\* Significantly different (P<.05) from 2017.