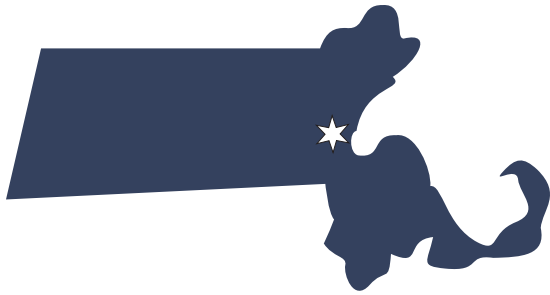


# The 2009 Broad Prize for Urban Education



## Boston Public Schools Massachusetts

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# Boston Public Schools

## MASSACHUSETTS

### Background Information

#### Description of district: 2004–2007

	2004	2005	2006	2007
<b>District characteristics</b>				
Locale <sup>1</sup>	—	—	11	11
Number of schools	136	136	139	139
<b>Student characteristics</b>				
Enrollment	60,150	57,742	57,349	56,388
District size rank <sup>2</sup>	67	70	74	76
Percent low-income students <sup>3</sup>	73	74	73	73
Percent non-White students	86	86	85	85
<b>Percent of students by race/ethnicity</b>				
African American	46	46	43	41
Asian	9	9	9	9
Hispanic	30	31	33	35
White	14	14	14	14
American Indian/Alaska Native	0	0	0	0
Not reported <sup>4</sup>	0	0	1	1
Percent English language learners	19	17	16	18
Percent students with disabilities	20	20	19	20
<b>District expenditures</b>				
Total current expenditures per pupil	\$16,043	\$17,253	\$18,554	\$19,435
Instructional expenditures per pupil	\$9,802	\$10,527	\$11,325	\$11,129
<b>State expenditures</b>				
Total current expenditures per pupil	\$11,015	\$11,642	\$12,564	\$12,857
Instructional expenditures per pupil	\$7,082	\$7,410	\$8,187	\$8,289

SOURCE: Analysis of data from the U.S. Department of Education, National Center for Education Statistics, Common Core of Data (CCD).

— Not available. † Data were suppressed due to unreliability. See methodology section.

<sup>1</sup> In 2006, the CCD began reporting a new 2-digit locale code based on urban clusters. As defined by the CCD, locale code 11 represents a large city, code 12 represents a midsize city, and code 21 represents a suburb of a large urban area.

<sup>2</sup> District size rank is based on enrollment in local school districts in the 50 states and DC, and does not include other district types or territories.

<sup>3</sup> Low-income students are eligible for Free or Reduced-Price School Lunch (FRSL).

<sup>4</sup> Not reported may include students with missing race/ethnicity information and/or students with race/ethnicities not recognized by the CCD.

NOTES: CCD data for 2008 were not available at time of report production. 2007 expenditures data were obtained from the U.S. Census Bureau and determined to be comparable to previous years' CCD figures.

#### State test information: 2005–2008

Subject/level	Most recent test included in analysis	Grades included in analysis			
		2005	2006	2007	2008
<b>Reading</b>					
Elementary	Massachusetts Comprehensive Assessment System	<i>3, 4</i>	3, 4, 5	3, 4, 5	3, 4, 5
Middle	Massachusetts Comprehensive Assessment System	<i>7</i>	6, 7, 8	6, 7, 8	6, 7, 8
High	Massachusetts Comprehensive Assessment System	10	10	10	10
<b>Mathematics</b>					
Elementary	Massachusetts Comprehensive Assessment System	<i>4</i>	3, 4, 5	3, 4, 5	3, 4, 5
Middle	Massachusetts Comprehensive Assessment System	<i>6, 8</i>	6, 7, 8	6, 7, 8	6, 7, 8
High	Massachusetts Comprehensive Assessment System	10	10	10	10

SOURCE: State education agency.

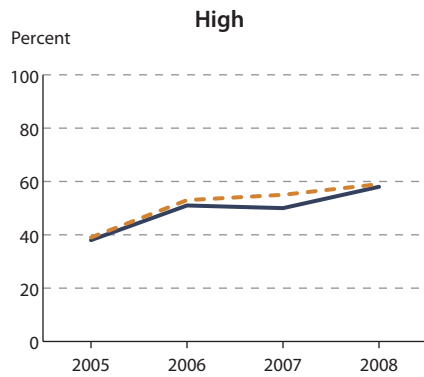
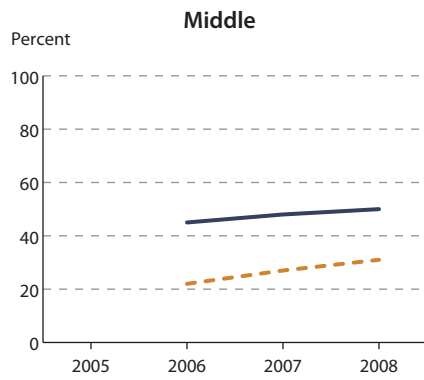
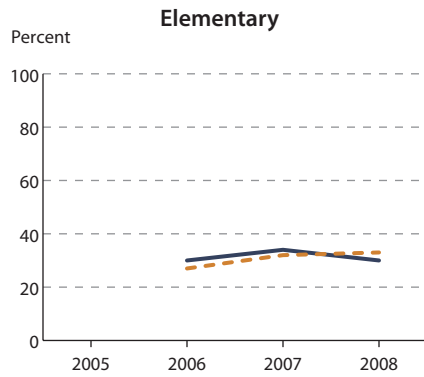
— Not available.

NOTES: **Italics** indicate tests were not comparable to other years. **At the elementary and middle school levels**, additional grades were tested in 2006; as a result, 2005 proficiency rates were not comparable and were not included in change calculations.

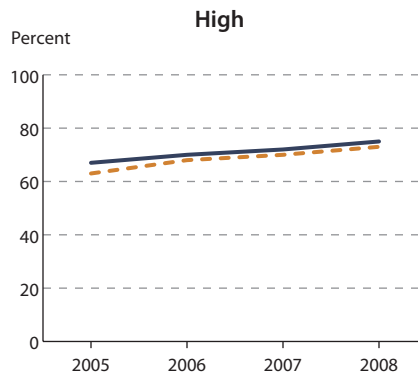
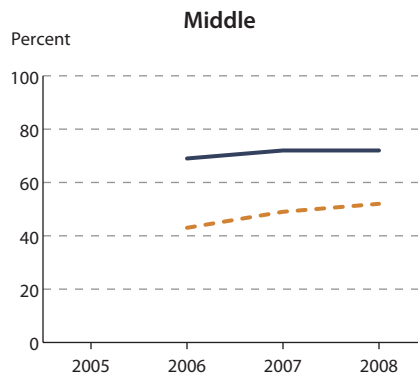
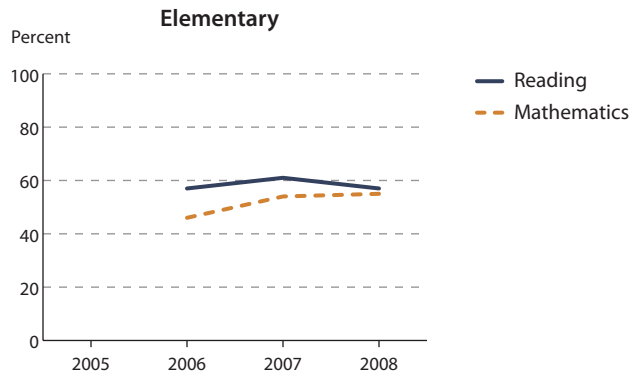
## Trends in Overall Reading and Mathematics Proficiency

Percentage of all students in the district and the state<sup>1</sup> scoring at or above proficient in reading and mathematics in elementary, middle, and high school: 2005–2008

### DISTRICT PROFICIENCY RATE



### STATE<sup>1</sup> PROFICIENCY RATE



SOURCE: Analysis of state test data.

<sup>1</sup> Unless otherwise indicated in the NOTES section below, state values exclude the district's results; see methodology section.

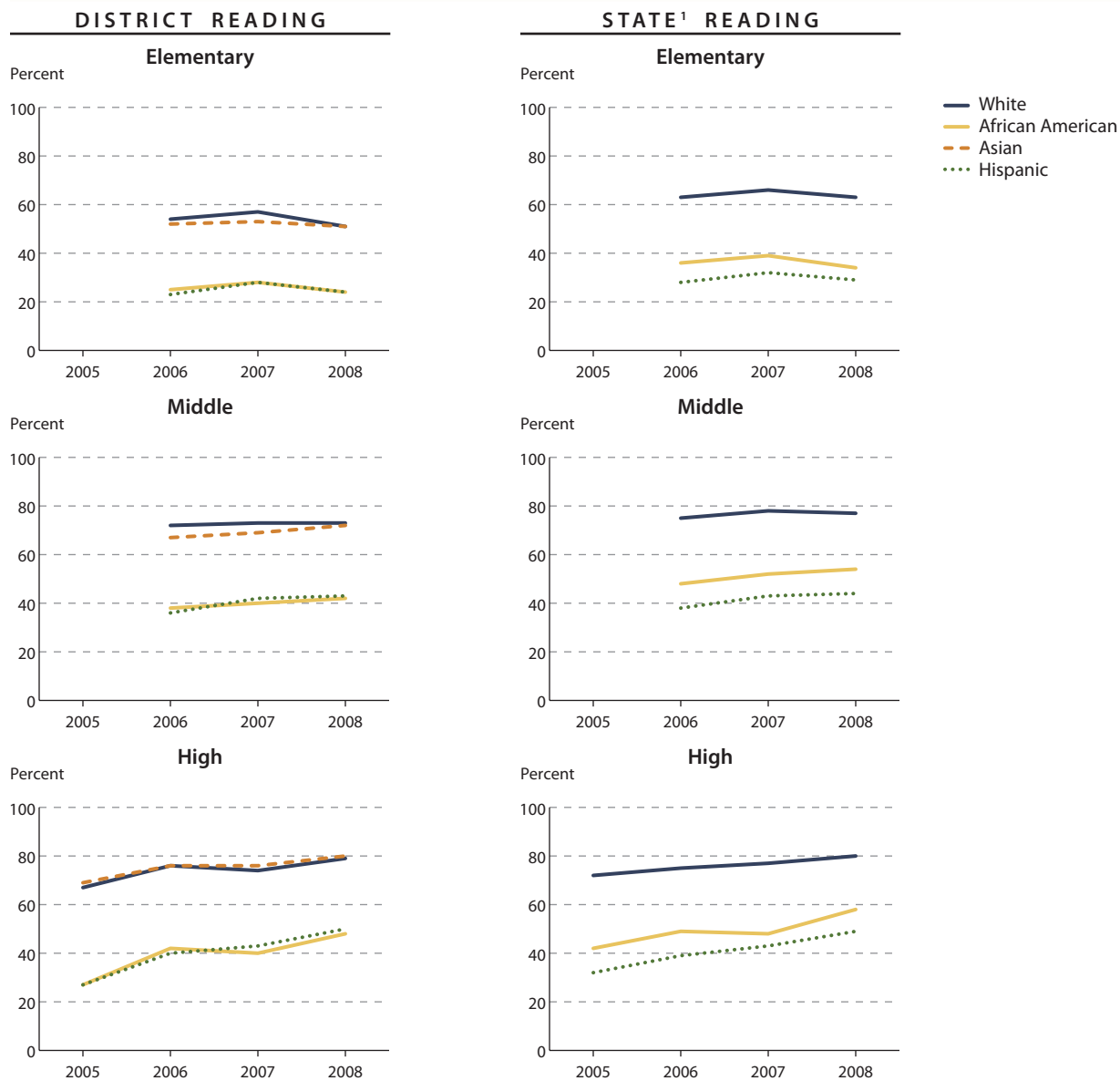
NOTES: See tables on pages 8 and 10 for details. Gaps in lines represent missing or noncomparable data.

# Boston Public Schools

MASSACHUSETTS

## Race/Ethnicity Trends in Reading Proficiency

Percentage of students scoring at or above proficient in reading, by race/ethnicity, for the district and the state<sup>1</sup>: 2005–2008



SOURCE: Analysis of state test data.

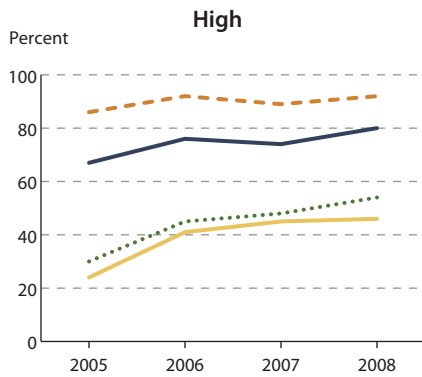
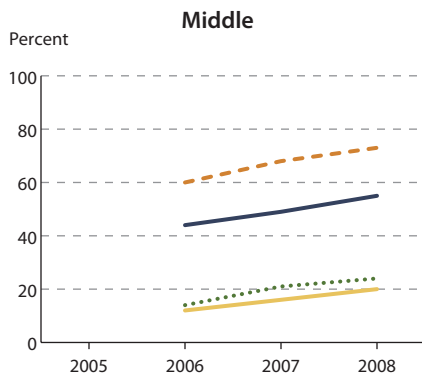
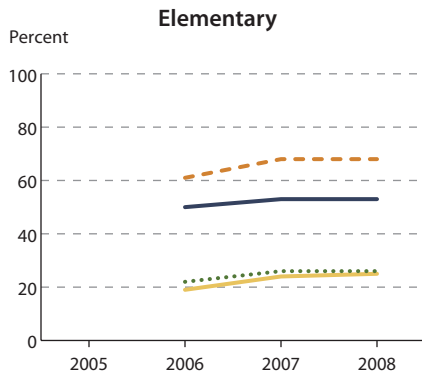
<sup>1</sup> Unless otherwise indicated in the NOTES section below, state values exclude the district's results; see methodology section.

NOTES: See table on page 8 for details. Gaps in lines represent missing or noncomparable data.

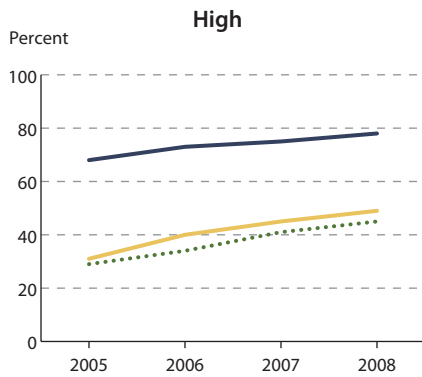
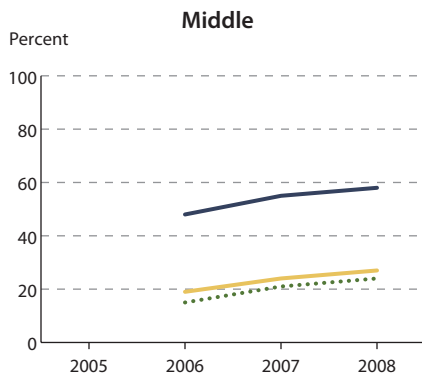
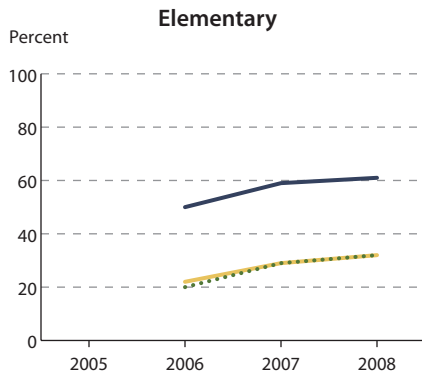
## Race/Ethnicity Trends in Mathematics Proficiency

Percentage of students scoring at or above proficient in mathematics, by race/ethnicity, for the district and the state<sup>1</sup>: 2005–2008

### DISTRICT MATHEMATICS



### STATE<sup>1</sup> MATHEMATICS



— White  
— African American  
— Asian  
— Hispanic

SOURCE: Analysis of state test data.

<sup>1</sup> Unless otherwise indicated in the NOTES section below, state values exclude the district's results; see methodology section.

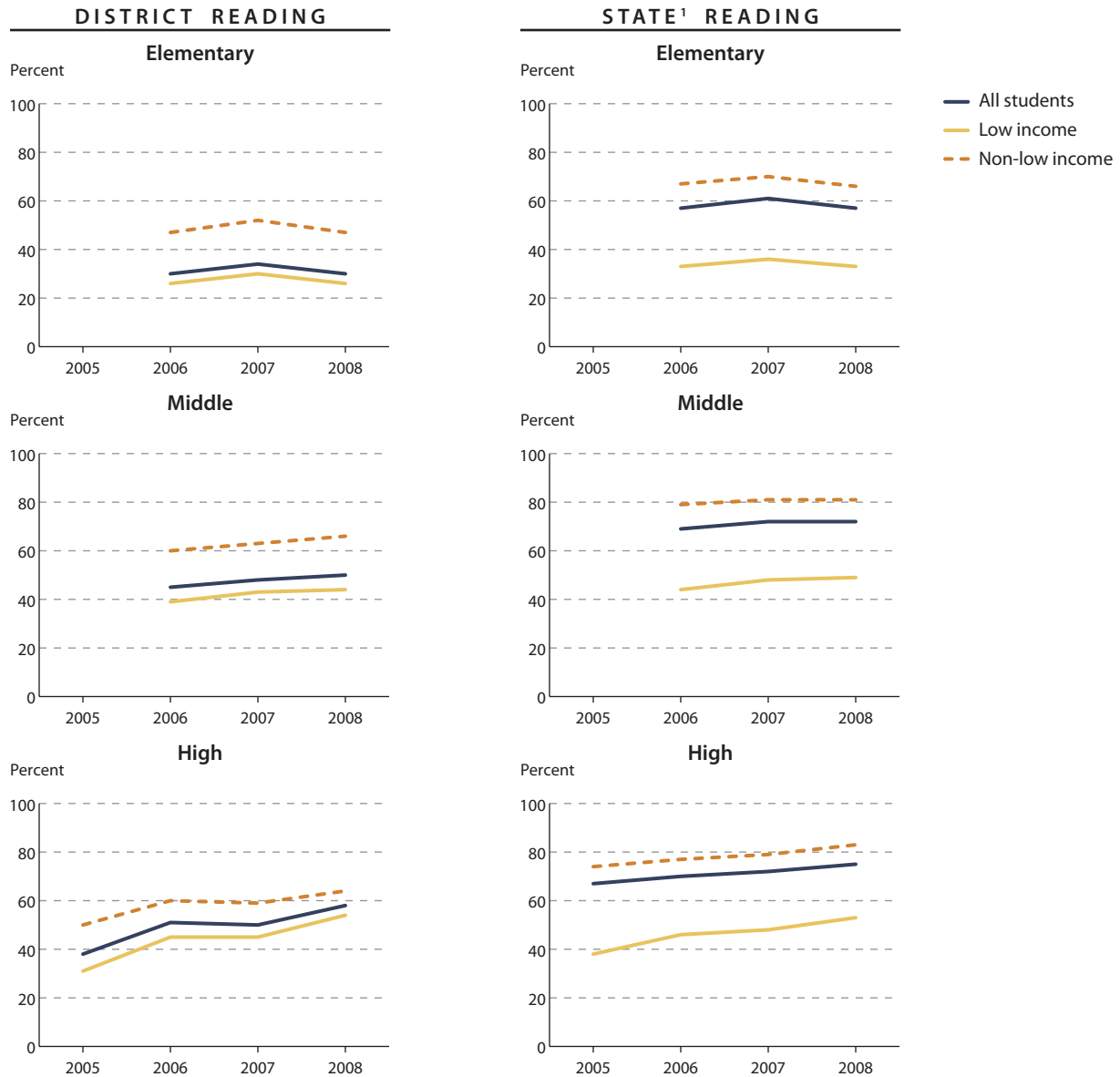
NOTES: See table on page 10 for details. Gaps in lines represent missing or noncomparable data.

# Boston Public Schools

MASSACHUSETTS

## Income Status Trends in Reading Proficiency

Percentage of students scoring at or above proficient in reading, by income status, for the district and the state:<sup>1</sup> 2005–2008



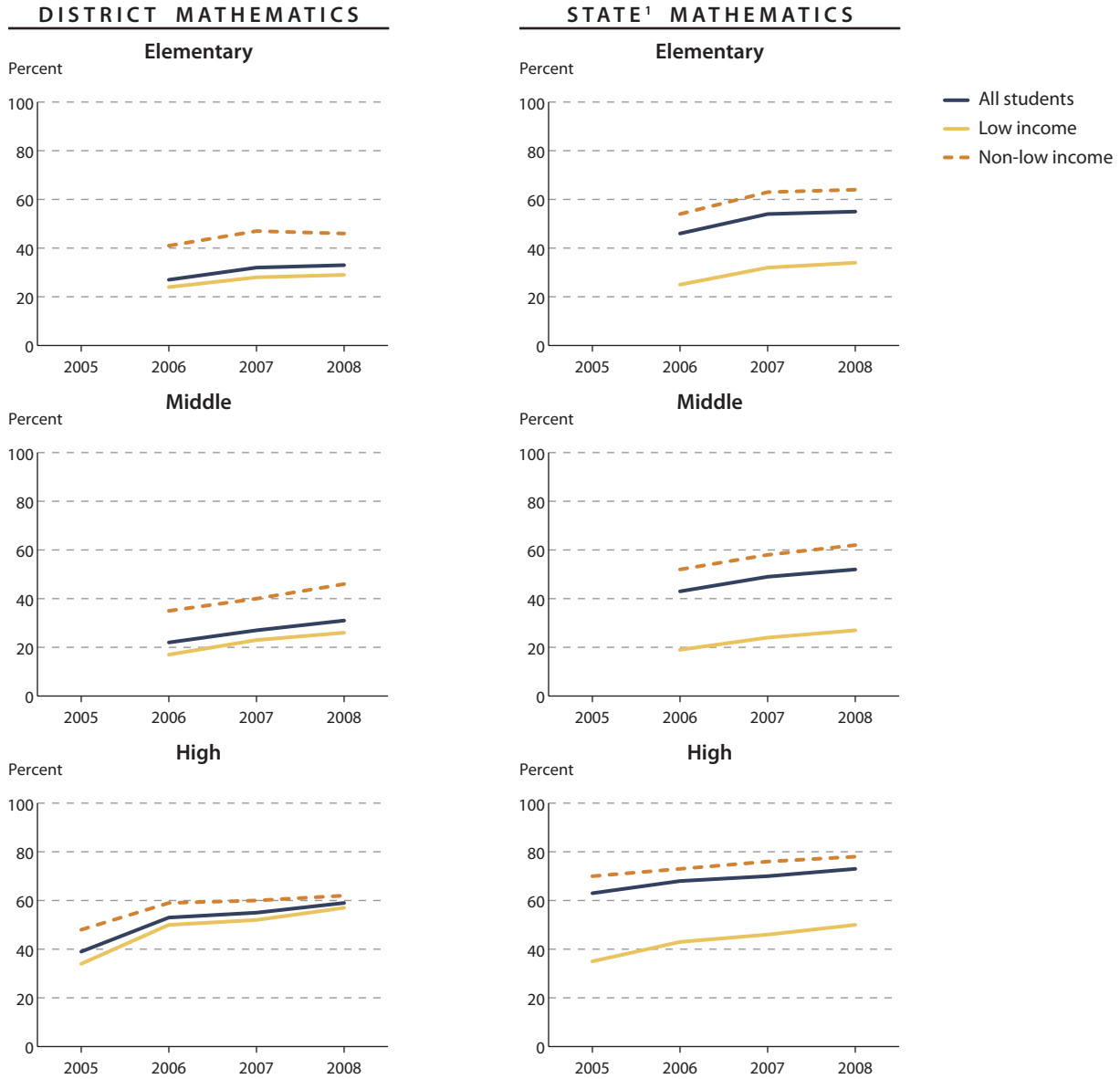
SOURCE: Analysis of state test data.

<sup>1</sup> Unless otherwise indicated in the NOTES section below, state values exclude the district's results; see methodology section.

NOTES: See table on page 8 for details. Gaps in lines represent missing or noncomparable data.

## Income Status Trends in Mathematics Proficiency

Percentage of students scoring at or above proficient in mathematics, by income status, for the district and the state<sup>1</sup>: 2005–2008



SOURCE: Analysis of state test data.

<sup>1</sup> Unless otherwise indicated in the NOTES section below, state values exclude the district's results; see methodology section.

NOTES: See table on page 10 for details. Gaps in lines represent missing or noncomparable data.

# Boston Public Schools

MASSACHUSETTS

## Reading Proficiency Data Summary

### Percentage of students in the district and the state<sup>1</sup> scoring at or above proficient in reading: 2005–2008

	2005	2006	2007	2008	Change			Average change
					2005–2008	2006–2008	2007–2008	
<b>Elementary</b>								
District								
All	28	30	34	30	‡	0	-4	0
African American	23	25	28	24	‡	0	-4	0
Asian	46	52	53	51	‡	-1	-2	-1
Hispanic	21	23	28	24	‡	<b>1</b>	-4	<b>1</b>
White	50	54	57	51	‡	-3	-6	-2
Low income	24	26	30	26	‡	-1	-4	0
Non-low income	46	47	52	47	‡	0	-5	0
State <sup>1</sup>								
All	58	57	61	57	‡	0	-4	0
African American	36	36	39	34	‡	-2	-4	-1
Asian	†	†	†	†	‡	†	†	†
Hispanic	27	28	32	29	‡	<b>1</b>	-3	0
White	63	63	66	63	‡	-1	-4	0
Low income	33	33	36	33	‡	0	-4	0
Non-low income	65	67	70	66	‡	0	-4	0
<b>Middle</b>								
District								
All	44	45	48	50	‡	<b>5</b>	<b>2</b>	<b>2</b>
African American	36	38	40	42	‡	<b>4</b>	<b>2</b>	<b>2</b>
Asian	68	67	69	72	‡	<b>5</b>	<b>4</b>	<b>3</b>
Hispanic	33	36	42	43	‡	<b>7</b>	<b>2</b>	<b>3</b>
White	74	72	73	73	‡	<b>1</b>	0	<b>1</b>
Low income	38	39	43	44	‡	<b>5</b>	<b>1</b>	<b>2</b>
Non-low income	63	60	63	66	‡	<b>6</b>	<b>3</b>	<b>3</b>
State <sup>1</sup>								
All	67	69	72	72	‡	<b>2</b>	0	<b>1</b>
African American	44	48	52	54	‡	<b>6</b>	<b>1</b>	<b>3</b>
Asian	†	†	†	†	‡	†	†	†
Hispanic	36	38	43	44	‡	<b>7</b>	<b>1</b>	<b>3</b>
White	73	75	78	77	‡	<b>2</b>	-1	<b>1</b>
Low income	42	44	48	49	‡	<b>5</b>	<b>1</b>	<b>2</b>
Non-low income	76	79	81	81	‡	<b>2</b>	0	<b>1</b>
<b>High</b>								
District								
All	38	51	50	58	<b>20</b>	<b>7</b>	<b>8</b>	<b>6</b>
African American	27	42	40	48	<b>21</b>	<b>6</b>	<b>8</b>	<b>6</b>
Asian	69	76	76	80	<b>11</b>	<b>4</b>	<b>4</b>	<b>3</b>
Hispanic	27	40	43	50	<b>23</b>	<b>10</b>	<b>7</b>	<b>7</b>
White	67	76	74	79	<b>12</b>	<b>3</b>	<b>5</b>	<b>3</b>
Low income	31	45	45	54	<b>23</b>	<b>9</b>	<b>9</b>	<b>7</b>
Non-low income	50	60	59	64	<b>14</b>	<b>4</b>	<b>5</b>	<b>4</b>
State <sup>1</sup>								
All	67	70	72	75	<b>8</b>	<b>5</b>	<b>3</b>	<b>3</b>
African American	42	49	48	58	<b>16</b>	<b>9</b>	<b>9</b>	<b>5</b>
Asian	†	†	†	†	†	†	†	†
Hispanic	32	39	43	49	<b>17</b>	<b>10</b>	<b>6</b>	<b>6</b>
White	72	75	77	80	<b>8</b>	<b>5</b>	<b>3</b>	<b>3</b>
Low income	38	46	48	53	<b>15</b>	<b>7</b>	<b>4</b>	<b>5</b>
Non-low income	74	77	79	83	<b>9</b>	<b>5</b>	<b>4</b>	<b>3</b>

SOURCE: Analysis of state test data.

— Not available. † Data were suppressed due to unreliability or if the subgroup represented less than 5 percent of test takers at a level. See methodology section.

‡ Calculation could not be performed due to a change in the state test.

<sup>1</sup> Unless otherwise indicated in the NOTES section below, state values exclude the district's results; see methodology section.

NOTES: Details on the calculation of **average change** are found in the methodology section. **Positive change values** appear in color. **Italicized values** are not comparable to other years. **At the elementary and middle school levels**, additional grades were tested in 2006; as a result, 2005 proficiency rates were not comparable and were not included in change calculations.

# Boston Public Schools

MASSACHUSETTS

## Reading Proficiency Gaps

Percentage-point gaps in reading proficiency rates between disadvantaged and advantaged groups: 2005–2008

	2005	2006	2007	2008	Change			Average change	2008 decile rank
					2005–2008	2006–2008	2007–2008		
<b>Elementary</b>									
Internal district gap									
African American vs. White	-27	-30	-29	-27	‡	3	2	2	8
Hispanic vs. White	-28	-32	-29	-27	‡	4	2	2	8
Low income vs. non-low income	-22	-21	-22	-21	‡	-1	1	0	4
Internal district vs. internal state <sup>1</sup> gap									
African American vs. White	0	-2	-1	2	‡	4	2	2	—
Hispanic vs. White	7	4	6	7	‡	3	2	1	—
Low income vs. non-low income	10	13	12	13	‡	0	1	0	—
External gap: district disadvantaged vs. state <sup>1</sup> advantaged									
African American vs. White	-40	-39	-38	-38	‡	0	0	0	—
Hispanic vs. White	-42	-40	-39	-39	‡	2	0	1	—
Low income vs. non-low income	-40	-40	-40	-41	‡	0	0	0	—
<b>Middle</b>									
Internal district gap									
African American vs. White	-38	-33	-33	-31	‡	2	2	1	10
Hispanic vs. White	-41	-35	-31	-30	‡	5	2	3	9
Low income vs. non-low income	-25	-21	-20	-22	‡	-1	-2	-1	6
Internal district vs. internal state <sup>1</sup> gap									
African American vs. White	-9	-6	-7	-7	‡	-1	0	0	—
Hispanic vs. White	-5	2	4	4	‡	1	0	1	—
Low income vs. non-low income	9	14	13	10	‡	-4	-3	-2	—
External gap: district disadvantaged vs. state <sup>1</sup> advantaged									
African American vs. White	-37	-37	-38	-35	‡	1	3	1	—
Hispanic vs. White	-40	-39	-37	-34	‡	4	2	2	—
Low income vs. non-low income	-38	-40	-38	-37	‡	3	1	1	—
<b>High</b>									
Internal district gap									
African American vs. White	-40	-34	-34	-31	9	3	3	3	9
Hispanic vs. White	-40	-36	-31	-29	11	7	2	4	8
Low income vs. non-low income	-19	-15	-14	-10	9	5	4	3	2
Internal district vs. internal state <sup>1</sup> gap									
African American vs. White	-10	-8	-5	-8	1	-1	-3	1	—
Hispanic vs. White	0	0	3	2	2	2	-1	1	—
Low income vs. non-low income	16	16	16	20	3	3	4	1	—
External gap: district disadvantaged vs. state <sup>1</sup> advantaged									
African American vs. White	-45	-33	-37	-32	13	1	5	4	—
Hispanic vs. White	-45	-35	-34	-30	15	5	4	5	—
Low income vs. non-low income	-43	-32	-34	-29	14	4	5	4	—

SOURCE: Analysis of state test data.

— Not available. † Data were suppressed due to unreliability or if the subgroup represented less than 5 percent of test takers at a level. See methodology section.

‡ Calculation could not be performed due to a change in the state test.

<sup>1</sup> Unless otherwise indicated in the NOTES section below, state values exclude the district's results; see methodology section.

NOTES: In the first four columns, negative numbers indicate an achievement gap, where the disadvantaged group performed lower than the advantaged group. (Positive numbers indicate the disadvantaged group performed higher than the advantaged group.) In the "change" columns, negative numbers indicate the achievement gap widened; positive numbers indicate the achievement gap narrowed. Average change values appear in color when the gap is closing; details on the definition of a gap closure are found in the methodology section. Details on the calculation of average change are also found in the methodology section. 2008 decile ranks appear in color when the 2008 gap is among the 20 percent of districts with the smallest gaps in the state. Italicized values are not comparable to other years. At the elementary and middle school levels, additional grades were tested in 2006; as a result, 2005 proficiency rates were not comparable and were not included in change calculations.

# Boston Public Schools

MASSACHUSETTS

## Mathematics Proficiency Data Summary

### Percentage of students in the district and the state<sup>1</sup> scoring at or above proficient in mathematics: 2005–2008

	2005	2006	2007	2008	Change			Average change
					2005–2008	2006–2008	2007–2008	
<b>Elementary</b>								
District								
All	21	27	32	33	‡	<b>6</b>	<b>1</b>	<b>3</b>
African American	14	19	24	25	‡	<b>6</b>	<b>1</b>	<b>3</b>
Asian	52	61	68	68	‡	<b>7</b>	0	<b>3</b>
Hispanic	15	22	26	26	‡	<b>4</b>	0	<b>2</b>
White	40	50	53	53	‡	<b>2</b>	-1	<b>1</b>
Low income	18	24	28	29	‡	<b>5</b>	<b>1</b>	<b>3</b>
Non-low income	34	41	47	46	‡	<b>5</b>	-1	<b>2</b>
State <sup>1</sup>								
All	42	46	54	55	‡	<b>9</b>	<b>1</b>	<b>5</b>
African American	18	22	29	32	‡	<b>10</b>	<b>3</b>	<b>5</b>
Asian	†	†	†	†	‡	†	†	†
Hispanic	16	20	29	32	‡	<b>12</b>	<b>4</b>	<b>6</b>
White	46	50	59	61	‡	<b>10</b>	<b>1</b>	<b>5</b>
Low income	19	25	32	34	‡	<b>9</b>	<b>2</b>	<b>5</b>
Non-low income	47	54	63	64	‡	<b>9</b>	0	<b>5</b>
<b>Middle</b>								
District								
All	23	22	27	31	‡	<b>10</b>	<b>4</b>	<b>5</b>
African American	13	12	16	20	‡	<b>8</b>	<b>5</b>	<b>4</b>
Asian	64	60	68	73	‡	<b>13</b>	<b>6</b>	<b>7</b>
Hispanic	16	14	21	24	‡	<b>10</b>	<b>4</b>	<b>5</b>
White	45	44	49	55	‡	<b>11</b>	<b>6</b>	<b>6</b>
Low income	19	17	23	26	‡	<b>9</b>	<b>4</b>	<b>4</b>
Non-low income	38	35	40	46	‡	<b>12</b>	<b>6</b>	<b>6</b>
State <sup>1</sup>								
All	44	43	49	52	‡	<b>9</b>	<b>3</b>	<b>4</b>
African American	19	19	24	27	‡	<b>7</b>	<b>2</b>	<b>4</b>
Asian	†	†	†	†	‡	†	†	†
Hispanic	16	15	21	24	‡	<b>8</b>	<b>3</b>	<b>4</b>
White	49	48	55	58	‡	<b>10</b>	<b>3</b>	<b>5</b>
Low income	20	19	24	27	‡	<b>8</b>	<b>3</b>	<b>4</b>
Non-low income	51	52	58	62	‡	<b>10</b>	<b>3</b>	<b>5</b>
<b>High</b>								
District								
All	39	53	55	59	<b>20</b>	<b>6</b>	<b>4</b>	<b>6</b>
African American	24	41	45	46	<b>22</b>	<b>5</b>	<b>1</b>	<b>7</b>
Asian	86	92	89	92	<b>6</b>	0	<b>3</b>	<b>2</b>
Hispanic	30	45	48	54	<b>24</b>	<b>9</b>	<b>6</b>	<b>8</b>
White	67	76	74	80	<b>13</b>	<b>4</b>	<b>6</b>	<b>4</b>
Low income	34	50	52	57	<b>23</b>	<b>7</b>	<b>5</b>	<b>7</b>
Non-low income	48	59	60	62	<b>14</b>	<b>3</b>	<b>2</b>	<b>4</b>
State <sup>1</sup>								
All	63	68	70	73	<b>9</b>	<b>5</b>	<b>3</b>	<b>3</b>
African American	31	40	45	49	<b>17</b>	<b>9</b>	<b>4</b>	<b>6</b>
Asian	†	†	†	†	†	†	†	†
Hispanic	29	34	41	45	<b>16</b>	<b>10</b>	<b>4</b>	<b>5</b>
White	68	73	75	78	<b>10</b>	<b>5</b>	<b>3</b>	<b>3</b>
Low income	35	43	46	50	<b>15</b>	<b>7</b>	<b>4</b>	<b>5</b>
Non-low income	70	73	76	78	<b>9</b>	<b>5</b>	<b>2</b>	<b>3</b>

SOURCE: Analysis of state test data.

— Not available. † Data were suppressed due to unreliability or if the subgroup represented less than 5 percent of test takers at a level. See methodology section.

‡ Calculation could not be performed due to a change in the state test.

<sup>1</sup> Unless otherwise indicated in the NOTES section below, state values exclude the district's results; see methodology section.

NOTES: Details on the calculation of **average change** are found in the methodology section. **Positive change values** appear in color. **Italicized values** are not comparable to other years. **At the elementary and middle school levels**, additional grades were tested in 2006; as a result, 2005 proficiency rates were not comparable and were not included in change calculations.

# Boston Public Schools

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## Mathematics Proficiency Gaps

### Percentage-point gaps in mathematics proficiency rates between disadvantaged and advantaged groups: 2005–2008

	2005	2006	2007	2008	Change			Average change	2008 decile rank
					2005–2008	2006–2008	2007–2008		
<b>Elementary</b>									
Internal district gap									
African American vs. White	-26	-31	-30	-28	‡	4	2	<b>2</b>	7
Hispanic vs. White	-25	-28	-27	-26	‡	2	1	<b>1</b>	8
Low income vs. non-low income	-16	-17	-19	-16	‡	0	2	0	<b>2</b>
Internal district vs. internal state <sup>1</sup> gap									
African American vs. White	2	-3	0	1	‡	4	0	<b>2</b>	—
Hispanic vs. White	5	2	3	2	‡	0	-1	0	—
Low income vs. non-low income	12	13	13	13	‡	0	1	0	—
External gap: district disadvantaged vs. state <sup>1</sup> advantaged									
African American vs. White	-32	-31	-36	-36	‡	-5	0	-2	—
Hispanic vs. White	-31	-28	-33	-35	‡	-6	-1	-3	—
Low income vs. non-low income	-29	-30	-35	-34	‡	-4	1	-2	—
<b>Middle</b>									
Internal district gap									
African American vs. White	-32	-32	-34	-34	‡	-3	-1	-1	9
Hispanic vs. White	-28	-29	-29	-30	‡	-1	-2	-1	9
Low income vs. non-low income	-19	-17	-18	-20	‡	-3	-3	-1	4
Internal district vs. internal state <sup>1</sup> gap									
African American vs. White	-2	-3	-3	-3	‡	0	0	0	—
Hispanic vs. White	5	3	5	4	‡	0	-2	0	—
Low income vs. non-low income	11	16	16	14	‡	-1	-2	-1	—
External gap: district disadvantaged vs. state <sup>1</sup> advantaged									
African American vs. White	-36	-36	-39	-37	‡	-1	2	-1	—
Hispanic vs. White	-32	-34	-34	-33	‡	0	1	0	—
Low income vs. non-low income	-32	-35	-36	-35	‡	-1	0	0	—
<b>High</b>									
Internal district gap									
African American vs. White	-43	-35	-29	-34	9	1	-5	<b>3</b>	9
Hispanic vs. White	-37	-31	-26	-26	11	5	0	<b>4</b>	6
Low income vs. non-low income	-14	-9	-8	-5	9	4	3	<b>3</b>	<b>1</b>
Internal district vs. internal state <sup>1</sup> gap									
African American vs. White	-6	-2	1	-5	2	-3	-6	<b>1</b>	—
Hispanic vs. White	2	7	8	7	5	0	-1	<b>2</b>	—
Low income vs. non-low income	21	21	22	23	2	2	1	<b>1</b>	—
External gap: district disadvantaged vs. state <sup>1</sup> advantaged									
African American vs. White	-44	-32	-30	-32	12	0	-2	<b>4</b>	—
Hispanic vs. White	-38	-28	-27	-24	14	4	3	<b>4</b>	—
Low income vs. non-low income	-36	-23	-24	-21	14	2	3	<b>4</b>	—

SOURCE: Analysis of state test data.

— Not available. † Data were suppressed due to unreliability or if the subgroup represented less than 5 percent of test takers at a level. See methodology section.

‡ Calculation could not be performed due to a change in the state test.

<sup>1</sup> Unless otherwise indicated in the NOTES section below, state values exclude the district's results; see methodology section.

NOTES: In the first four columns, negative numbers indicate an achievement gap, where the disadvantaged group performed lower than the advantaged group. (Positive numbers indicate the disadvantaged group performed higher than the advantaged group.) In the "change" columns, negative numbers indicate the achievement gap widened; positive numbers indicate the achievement gap narrowed. Average change values appear in color when the gap is closing; details on the definition of a gap closure are found in the methodology section. Details on the calculation of average change are also found in the methodology section. 2008 decile ranks appear in color when the 2008 gap is among the 20 percent of districts with the smallest gaps in the state. Italicized values are not comparable to other years. At the elementary and middle school levels, additional grades were tested in 2006; as a result, 2005 proficiency rates were not comparable and were not included in change calculations.

# Boston Public Schools

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## Reading Outperformance by Proficiency Category: District vs. State<sup>1</sup>

Percentage of students at various levels of proficiency in reading in 2008, average change from 2005 to 2008, and count of instances when the district outperformed the state<sup>1</sup>

	2008 performance				Average change			
	Below Proficient	Proficient	Advanced	Proficient or above	Below Proficient	Proficient	Advanced	Proficient or above
<b>Elementary</b>								
District								
All	70	25	5	30	0	0	0	0
African American	76	22	3	24	0	0	0	0
Asian	49	39	12	51	1	1	-2	-1
Hispanic	76	21	3	24	-1	1	0	1
White	49	39	12	51	2	-1	-1	-2
Low income	74	23	3	26	0	0	0	0
Non-low income	53	36	11	47	0	1	-1	0
State <sup>1</sup>								
All	43	44	12	57	0	1	-1	0
African American	66	30	5	34	1	0	0	-1
Asian	†	†	†	†	†	†	†	†
Hispanic	71	26	3	29	0	1	0	0
White	37	48	15	63	0	0	-1	0
Low income	67	29	4	33	0	0	0	0
Non-low income	34	50	16	66	0	1	-1	0
<b>Middle</b>								
District								
All	50	45	5	50	-2	2	0	2
African American	58	40	2	42	-2	2	0	2
Asian	28	58	15	72	-3	0	2	3
Hispanic	57	40	3	43	-3	3	0	3
White	27	61	12	73	-1	1	-1	1
Low income	56	41	3	44	-2	2	0	2
Non-low income	34	56	10	66	-3	3	0	3
State <sup>1</sup>								
All	28	58	13	72	-1	0	1	1
African American	46	49	5	54	-3	2	1	3
Asian	†	†	†	†	†	†	†	†
Hispanic	56	41	3	44	-3	3	1	3
White	23	62	15	77	-1	0	1	1
Low income	51	45	3	49	-2	2	1	2
Non-low income	19	63	18	81	-1	-1	2	1
<b>High</b>								
District								
All	42	44	14	58	-6	5	1	6
African American	52	41	7	48	-6	5	1	6
Asian	20	50	30	80	-3	3	0	3
Hispanic	50	42	8	50	-7	6	1	7
White	21	50	29	79	-3	3	1	3
Low income	46	44	10	54	-7	6	1	7
Non-low income	36	44	20	64	-4	3	1	4
State <sup>1</sup>								
All	25	51	24	75	-3	2	1	3
African American	42	49	8	58	-5	5	0	5
Asian	†	†	†	†	†	†	†	†
Hispanic	51	42	7	49	-6	5	1	6
White	20	53	27	80	-3	2	1	3
Low income	47	45	8	53	-5	4	0	5
Non-low income	17	53	29	83	-3	1	2	3
<b>Count of district outperformances/available comparisons</b>								
All	0/3	0/3	0/3	0/3	2/3	2/3	2/3	2/3
African American	0/3	0/3	0/3	0/3	2/3	1/3	1/3	2/3
Asian	†	†	†	†	†	†	†	†
Hispanic	1/3	0/3	1/3	1/3	1/3	1/3	0/3	1/3
White	0/3	0/3	1/3	0/3	1/3	2/3	0/3	1/3
Low income	1/3	0/3	1/3	1/3	1/3	1/3	1/3	1/3
Non-low income	0/3	0/3	0/3	0/3	2/3	3/3	0/3	2/3

SOURCE: Analysis of state test data.

— Not available. † Data were suppressed due to unreliability or if the subgroup represented less than 5 percent of test takers at a level. See methodology section.

‡ Calculation could not be performed due to a change in the state test.

<sup>1</sup> Unless otherwise indicated in the NOTES section below, state values exclude the district's results; see methodology section.

NOTES: **Advanced** is the state's highest proficiency level above proficient. **Outperformance comparisons** were performed on unrounded proficiencies. Instances of the **district outperforming the state** by a value of 0.5 percent or more appear in color. Details on the calculation of **average change** are found in the methodology section. For this state, **advanced** corresponds to Above Proficient/Advanced and **below proficient** combines the Needs Improvement and Warning/Failing categories. **At the elementary and middle school levels**, 2005 proficiency results were not included in change calculations; see page 2, table 2 for details.

# Boston Public Schools

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## Mathematics Outperformance by Proficiency Category: District vs. State<sup>1</sup>

Percentage of students at various levels of proficiency in mathematics in 2008, average change from 2005 to 2008, and count of instances when the district outperformed the state<sup>1</sup>

	2008 performance				Average change			
	Below Proficient	Proficient	Advanced	Proficient or above	Below Proficient	Proficient	Advanced	Proficient or above
<b>Elementary</b>								
District								
All	67	23	10	33	-3	<b>1</b>	2	3
African American	75	20	5	25	-3	1	1	3
Asian	32	36	31	68	-3	-1	4	3
Hispanic	74	20	6	26	-2	1	1	2
White	47	32	20	53	-1	-2	3	1
Low income	71	21	8	29	-3	1	2	3
Non-low income	54	28	18	46	-2	<b>0</b>	3	2
State <sup>1</sup>								
All	45	32	23	55	-5	-1	5	5
African American	68	23	9	32	-5	2	3	5
Asian	†	†	†	†	†	†	†	†
Hispanic	68	23	9	32	-6	3	3	6
White	39	35	26	61	-5	-1	6	5
Low income	66	25	9	34	-5	2	2	5
Non-low income	36	35	28	64	-5	-2	7	5
<b>Middle</b>								
District								
All	69	23	9	31	<b>-5</b>	<b>4</b>	1	<b>5</b>
African American	80	17	3	20	-4	<b>3</b>	1	4
Asian	27	36	37	73	-7	2	5	7
Hispanic	<b>76</b>	<b>20</b>	5	<b>24</b>	<b>-5</b>	<b>4</b>	1	<b>5</b>
White	45	<b>37</b>	18	55	<b>-6</b>	<b>4</b>	1	<b>6</b>
Low income	74	20	7	26	-4	<b>3</b>	1	4
Non-low income	54	31	15	46	<b>-6</b>	<b>4</b>	2	<b>6</b>
State <sup>1</sup>								
All	48	32	20	52	-4	2	3	4
African American	73	21	6	27	-4	3	1	4
Asian	†	†	†	†	†	†	†	†
Hispanic	76	18	5	24	-4	3	1	4
White	42	36	22	58	-5	2	3	5
Low income	73	21	6	27	-4	3	1	4
Non-low income	38	36	25	62	-5	1	4	5
<b>High</b>								
District								
All	41	24	35	59	<b>-6</b>	<b>2</b>	<b>4</b>	<b>6</b>
African American	54	24	<b>22</b>	46	<b>-7</b>	<b>3</b>	<b>4</b>	<b>7</b>
Asian	8	14	78	92	-2	-1	3	2
Hispanic	<b>46</b>	<b>30</b>	<b>24</b>	<b>54</b>	<b>-8</b>	<b>3</b>	<b>4</b>	<b>8</b>
White	<b>20</b>	19	<b>61</b>	<b>80</b>	<b>-4</b>	1	3	<b>4</b>
Low income	<b>43</b>	26	<b>31</b>	<b>57</b>	<b>-7</b>	3	<b>4</b>	<b>7</b>
Non-low income	38	20	42	62	<b>-4</b>	<b>2</b>	3	<b>4</b>
State <sup>1</sup>								
All	27	29	43	73	-3	0	3	3
African American	51	29	19	49	-6	3	3	6
Asian	†	†	†	†	†	†	†	†
Hispanic	55	26	18	45	-5	2	3	5
White	22	30	48	78	-3	0	3	3
Low income	50	29	21	50	-5	2	2	5
Non-low income	22	28	50	78	-3	0	3	3
<b>Count of district outperformances/available comparisons</b>								
All	0/3	0/3	0/3	0/3	2/3	3/3	1/3	2/3
African American	0/3	0/3	1/3	0/3	1/3	2/3	1/3	1/3
Asian	†	†	†	†	†	†	†	†
Hispanic	2/3	2/3	1/3	2/3	2/3	2/3	1/3	2/3
White	1/3	1/3	1/3	1/3	2/3	1/3	0/3	2/3
Low income	1/3	0/3	1/3	1/3	1/3	1/3	1/3	1/3
Non-low income	0/3	0/3	0/3	0/3	2/3	3/3	0/3	2/3

SOURCE: Analysis of state test data.

— Not available. † Data were suppressed due to unreliability or if the subgroup represented less than 5 percent of test takers at a level. See methodology section.

‡ Calculation could not be performed due to a change in the state test.

<sup>1</sup> Unless otherwise indicated in the NOTES section below, state values exclude the district's results; see methodology section.

NOTES: **Advanced** is the state's highest proficiency level above proficient. **Outperformance comparisons** were performed on unrounded proficiencies. Instances of the **district outperforming the state** by a value of 0.5 percent or more appear in color. Details on the calculation of **average change** are found in the methodology section. For this state, **advanced** corresponds to Above Proficient/Advanced and **below proficient** combines the Needs Improvement and Warning/Failing categories. **At the elementary and middle school levels**, 2005 proficiency results were not included in change calculations; see page 2, table 2 for details.

# Boston Public Schools

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## Standardized Residuals for Reading

Standardized residuals<sup>1</sup> for regressions of the percentage of students in the district scoring at or above proficient in reading, controlling for district poverty level: 2005–2008



SOURCE: Analysis of state test data.

<sup>1</sup> Positive residuals indicate higher-than-expected performance, and negative residuals indicate lower-than-expected performance, given the district's poverty level. Residuals are expressed in standard units. Regressions were weighted by district size.

NOTES: See below for details.

Standardized residuals<sup>1</sup> for regressions of the percentage of students in the district scoring at or above proficient in reading, controlling for district poverty level: 2005–2008

	2005	2006	2007	2008	Average change	Decile rank <sup>2,3</sup>
Elementary	0.04	0.27	0.19	0.06	0.00	<b>4.00</b>
Middle	0.95	0.76	0.52	0.56	-0.14	<b>3.50</b>
High	0.29	0.86	0.45	0.64	<b>0.06</b>	<b>3.50</b>
Count of positive residuals in reading/ total available	3/3	3/3	3/3	3/3	1/3	3.67
Count of positive residuals in reading and mathematics/total available	6/6	6/6	6/6	5/6	2/6	3.33

SOURCE: Analysis of state test data.

— Not available. † Data were suppressed due to unreliability. See methodology section.

<sup>1</sup> Positive residuals indicate higher-than-expected performance, and negative residuals indicate lower-than-expected performance, given the district's poverty level. Residuals are expressed in standard units. Regressions were weighted by district size.

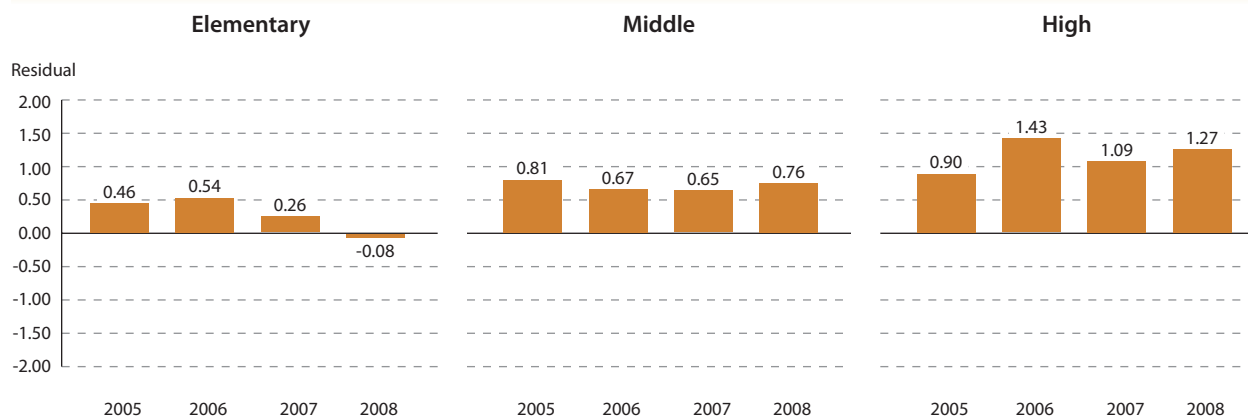
<sup>2</sup> Average decile rank of 2007 and 2008 residuals. See methodology section.

<sup>3</sup> For the count of "positive residuals" rows, the decile rank is the average rank for the three education levels.

NOTES: Positive average change values and decile ranks in the upper half (1–5) appear in color.

## Standardized Residuals for Mathematics

Standardized residuals<sup>1</sup> for regressions of the percentage of students in the district scoring at or above proficient in mathematics, controlling for district poverty level: 2005–2008



SOURCE: Analysis of state test data.

<sup>1</sup> Positive residuals indicate higher-than-expected performance, and negative residuals indicate lower-than-expected performance, given the district's poverty level. Residuals are expressed in standard units. Regressions were weighted by district size.

NOTES: See below for details.

Standardized residuals<sup>1</sup> for regressions of the percentage of students in the district scoring at or above proficient in mathematics, controlling for district poverty level: 2005–2008

	2005	2006	2007	2008	Average change	Decile rank <sup>2,3</sup>
Elementary	0.46	0.54	0.26	-0.08	-0.19	<b>4.50</b>
Middle	0.81	0.67	0.65	0.76	-0.02	<b>3.00</b>
High	0.90	1.43	1.09	1.27	<b>0.08</b>	<b>1.50</b>
Count of positive residuals in mathematics/ total available	3/3	3/3	3/3	2/3	1/3	3.00
Count of positive residuals in reading and mathematics/total available	6/6	6/6	6/6	5/6	2/6	3.33

SOURCE: Analysis of state test data.

— Not available. † Data were suppressed due to unreliability. See methodology section.

<sup>1</sup> Positive residuals indicate higher-than-expected performance, and negative residuals indicate lower-than-expected performance, given the district's poverty level. Residuals are expressed in standard units. Regressions were weighted by district size.

<sup>2</sup> Average decile rank of 2007 and 2008 residuals. See methodology section.

<sup>3</sup> For the count of "positive residuals" rows, the decile rank is the average rank for the three education levels.

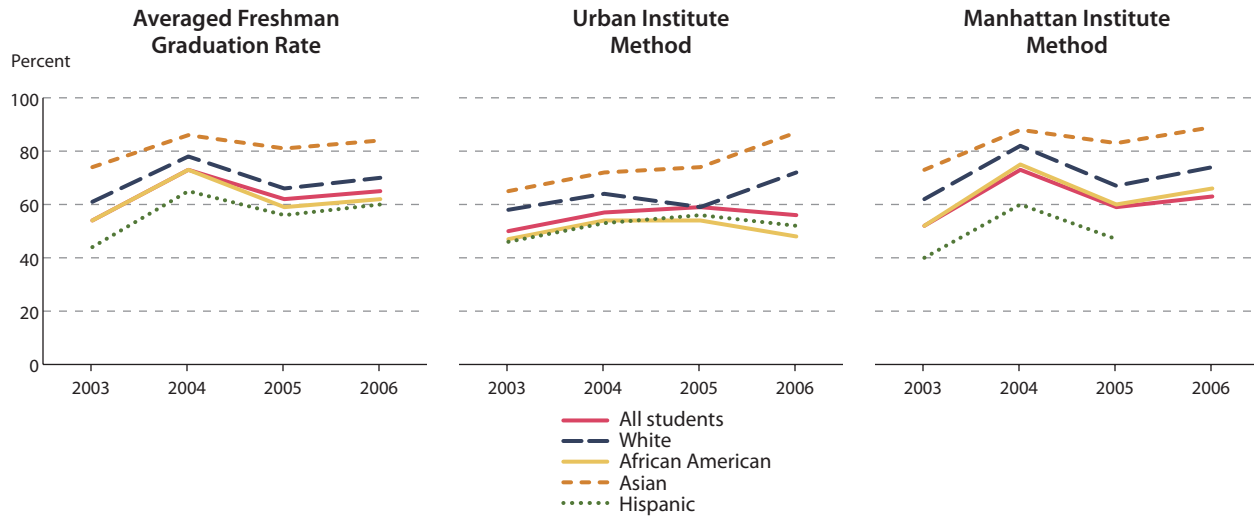
NOTES: Positive average change values and decile ranks in the upper half (1–5) appear in color.

# Boston Public Schools

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## High School Graduation Rates

Three estimated high school graduation rates: 2003–2006



Estimated high school graduation rates for the classes of 2003–2006

	2003	2004	2005	2006	Change			Average change
					2003–2006	2004–2006	2005–2006	
<b>Averaged Freshman Graduation Rate</b>								
All	54	73	62	65	11	-8	3	2
African American	54	73	59	62	8	-11	3	1
Asian	74	86	81	84	10	-2	3	3
Hispanic	44	65	56	60	16	-6	4	4
White	61	78	66	70	9	-8	4	1
<b>Urban Institute method<sup>1</sup></b>								
All	50	57	59	56	6	-1	-2	2
African American	47	54	54	48	1	-6	-6	0
Asian	65	72	74	87	22	15	14	7
Hispanic	46	53	56	52	6	-2	-4	2
White	58	64	59	72	14	7	13	4
<b>Manhattan Institute method<sup>1</sup></b>								
All	52	73	59	63	11	-10	4	2
African American	52	75	60	66	14	-8	6	3
Asian	73	88	83	89	17	1	6	5
Hispanic	40	60	47	†	†	†	†	3
White	62	82	67	74	12	-8	7	2

SOURCE: Analysis of data from the U.S. Department of Education, National Center for Education Statistics, Common Core of Data (CCD).

— Not available. † Data were suppressed due to unreliability or if a subgroup represented less than 5 percent of the population. See methodology section.

<sup>1</sup> The Urban Institute method is also known as Swanson's cumulative promotion index (SCPI) and the Manhattan Institute method is also known as Greene's graduation indicator (GGI).

NOTES: **Gaps in lines** represent missing or suppressed data. **Positive change values** appear in color. Details on the calculation of **average change** are found in the methodology section.

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## College Readiness Data

### Test scores and participation rates for college readiness examinations: 2005–2008

	2005	2006	2007	2008	Change			Average change
					2005–2008	2006–2008	2007–2008	
<b>SAT Reasoning Test<sup>1</sup></b>								
Mean total score (reading and mathematics)								
All	887	883	881	894	7	11	13	2
African American	†	†	†	818	†	†	†	†
Asian	†	†	†	1,057	†	†	†	†
Hispanic	†	†	†	813	†	†	†	†
White	†	†	†	1,102	†	†	†	†
Participation rate								
All	65	61	68	67	1	6	-2	1
African American	†	†	†	55	†	†	†	†
Asian	†	†	†	84	†	†	†	†
Hispanic	†	†	†	49	†	†	†	†
White	†	†	†	76	†	†	†	†
<b>ACT<sup>1</sup></b>								
Mean composite score (English, reading, mathematics, and science)								
All	20	19	20	20	0	1	0	0
African American	17	†	†	†	†	†	†	†
Asian	†	†	†	†	†	†	†	†
Hispanic	†	†	†	†	†	†	†	†
White	22	†	†	†	†	†	†	†
Participation rate								
All	2	2	2	3	1	1	1	0
African American	1	†	†	†	†	†	†	†
Asian	3	†	†	†	†	†	†	†
Hispanic	0	†	†	†	†	†	†	†
White	3	†	†	†	†	†	†	†
<b>Advanced Placement (AP) (all subjects)<sup>2</sup></b>								
Percent of tests taken with scores of 3 or above								
All	51	53	52	49	-2	-4	-3	-1
African American	21	31	32	23	2	-8	-8	1
Asian	62	63	65	68	6	5	3	2
Hispanic	31	31	25	28	-3	-3	2	-1
White	70	71	70	67	-2	-3	-2	-1
Participation rate								
All	17	17	18	20	3	3	1	1
African American	7	7	10	11	4	4	2	1
Asian	44	45	49	49	5	3	-1	2
Hispanic	11	11	9	10	0	-1	1	0
White	27	29	31	32	5	3	1	2

SOURCE: Analysis of data from the Common Core of Data (CCD), ACT, and the College Board (copyright © 2005–2008 The College Board. www.collegeboard.com).  
— Not available.

† Test scores were suppressed if fewer than 15 students took the test. Participation rates were suppressed due to unreliability or if the subgroup represented less than 5 percent of district enrollment in the relevant grades. See methodology section.

<sup>1</sup> Describes the most recent test results for graduating seniors.

<sup>2</sup> Describes test results for juniors and seniors taking any AP test in the given year.

NOTES: **Subgroup participation rates** may not reflect the “all students” rate due to some test takers not reporting their race/ethnicity. **Positive change values** appear in color. Details on the calculation of **average change** are found in the methodology section. **CCD data for 2008** were not available at the time of this analysis; participation rates for 2008 were estimated using 2007 enrollment data. Because more than 10 percent of test takers did not indicate their race/ethnicity, **2005–2007 SAT and 2006–2008 ACT subgroup data** were considered unreliable.

# Boston Public Schools

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## Adequate Yearly Progress (AYP)

### Overall AYP performance: 2005–2008

Subject/level	2005	2006	2007	2008
Percent of schools meeting AYP targets				
District	5	9	20	10
State	41	41	50	34
District overall AYP status	N	N	N	N

SOURCE: Data collected from state websites and education agencies.

— Not available.

NOTES: “Y” indicates the district met overall AYP targets. “N” indicates the district did not meet overall AYP targets.

### District AYP status by subject and subgroup<sup>1</sup>

	2008: Met proficiency targets	2008: Met participation targets
English language arts		
All students	N	Y
African American	N	Y
American Indian/Alaska Native	—	—
Asian/Pacific Islander	Y	Y
Hispanic	N	Y
White	N	Y
Low income	N	Y
English language learners	N	Y
Students with disabilities	N	Y
Mathematics		
All students	N	Y
African American	N	Y
American Indian/Alaska Native	—	—
Asian/Pacific Islander	Y	Y
Hispanic	N	Y
White	Y	Y
Low income	N	Y
English language learners	N	Y
Students with disabilities	N	Y

SOURCE: Data collected from state websites and education agencies.

— Not available.

<sup>1</sup> Data for the latest year available.

NOTES: “Y” indicates yes. “N” indicates no.

## Technical Notes and Methodology

### Understanding the Data Report

This data report contains all of the data collected and analyzed for selection of The 2009 Broad Prize finalists. It does not contain summaries that compare the district with other districts, nor any additional quantitative or qualitative data collected or analyzed for selection of the winner from among the finalists. However, summary tables containing results for all 100 eligible districts and the 3 previous years' winners are available at [www.broadprize.org](http://www.broadprize.org).

The Broad Prize finalists are determined by a panel of education experts from around the country, based on a review of the data and analyses for the 100 Broad Prize-eligible districts. There is neither a strict formula nor set of weighting factors applied to the data. Each Broad Prize Review Board member considers all of the data and analyses available each year and, based on his or her knowledge and expertise, selects five finalists. Both performance as of the most recent year and improvement over the four most recent years on the various measures included in this report are considered by the Review Board.

The rest of this section discusses the data collection and analysis procedures used to produce the data report. First, it describes the criteria and data sources for identifying the eligible districts. Second, it reviews each of the quantitative achievement measures used by the Review Board in March 2009 to identify the five finalists and the data on which the measures were based.

### Eligible Districts

To be eligible for The Broad Prize, school districts must meet certain criteria set by The Broad Foundation related to size, poverty and urbanicity. Winners from the previous three years are ineligible. The criteria for eligibility are:

- All K–12 districts serving more than 100,000 students (25 districts).
- All K–12 districts serving between 35,000 and 99,999 students in which at least 40 percent of students are eligible for free or reduced-price school lunch (FRSL), in which at least 40 percent of student enrollment comes from minority groups, and which have an urban designation (Locale Code 11, 12, or 21 in the CCD data<sup>1</sup>) (63 districts).
- The largest urban districts in states with no districts meeting the above criteria, as long as the district has at least 20,000 students (11 districts).
- The next largest districts in the nation meeting the criteria of 40 percent FRSL, 40 percent minority and an urban designation. The purpose of this criterion was to bring the total number of districts to 100 (1 district).

<sup>1</sup> As of 2007, CCD locale codes have changed: code 11 represents a large city; code 12 represents a mid-size city; and code 21 represents a large suburb. Sable, J. (2008). *Documentation to the NCES Common Core of Data Local Education Agency Universe Survey: School Year 2006–07 Version 1a* (NCES 2009-301). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC.

## Technical Notes and Methodology

For The 2009 Broad Prize, the 2006, 2007 and 2008 winners, Boston, New York City, and Brownsville, respectively, were removed from eligibility and the 2005 winner (Norfolk) became eligible again. Data for the non-eligible previous winners were also collected and reported to The Broad Prize Review Board.

The 100 eligible school districts are located in 38 states and the District of Columbia. Twelve states—Delaware, Hawaii, Idaho, Maine, Massachusetts, Montana, New Hampshire, North Dakota, South Dakota, Vermont, West Virginia and Wyoming—have no eligible districts this year. Hawaii is ineligible because it has a statewide school system.

### Data Used for Measures of Student Achievement

Detailed data on various measures of student achievement were obtained for each district, using federal, state and other sources. Wherever possible, data were collected by grade level, race/ethnicity (African American, Asian, Hispanic and White), and income status (low income and non-low income). The achievement data examined included performance on state achievement tests, graduation rates based on federal counts of high school enrollments and completions, college readiness data obtained from the College Board and ACT, and information on Adequate Yearly Progress (AYP).

### Reading and Mathematics Proficiency as Determined by State Tests

Key indicators of student performance are scores on state-mandated achievement tests and trends in scores over time. Test score data in reading and mathematics were collected from each state for 2005 through 2008.<sup>2</sup> These data were used to calculate the percentage of students in each district scoring at or above proficiency on their state tests in reading and mathematics in each grade. Weighted by the number of test takers at each grade level, these data on student achievement were aggregated across elementary grades (third through fifth), middle grades (sixth through eighth), and high school grades (ninth through 12th), where available. These state assessment data were analyzed (using methods described later) to calculate actual versus expected performance, to directly compare district with state performance, and to measure gaps and changes in gaps between low- and non-low-income students as well as between White and African-American students and White and Hispanic students.

#### *Important Note Regarding State Test Data*

Because states establish their own assessment and proficiency standards, districts' performance on state tests cannot be directly compared across states. To provide context for these data, summary tables containing information on state performance on the National Assessment of Education Progress (NAEP), the 2007 NAEP Trial Urban District Assessment (TUDA), and a 2006 Northwestern Evaluation Association (NWEA) proficiency-standards mapping study are available online at [www.broadprize.org](http://www.broadprize.org) but are not included in this data report.

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<sup>2</sup> The data were provided directly by state agencies or downloaded from their websites.

## Technical Notes and Methodology

### High School Graduation Rates

Another key measure of student performance is the graduation rate. While using longitudinal student data generates the most accurate graduation rate, such data are not currently available in most states. In the absence of longitudinal data, cross-sectional data can be used to generate estimates of rates of high school graduation. There are several methods generally considered reliable estimators of graduation rates, three of which are used in this report and are described in the next section on methods of analysis.

In order to generate estimates that are comparable across the 100 Broad Prize-eligible districts, MPR obtains diploma counts and enrollment data for the districts from the federal Common Core of Data (CCD). The data used to create graduation rate estimates include total and subgroup enrollments and completion counts for each district for the high school classes of 2003 through 2006 (the most recent years that were available at time of analysis). The different methods also employ grade-level enrollment data, but the methods vary in terms of the specific years of enrollment data used in the calculations.

### College Readiness Data

District-level measures of the college readiness of their students include SAT and ACT mean scores and participation rates. These two tests are designed to assess readiness for college-level work. Scale scores for each subject (reading and math) assessed by the SAT range from 200 to 800. (Writing scores were not included because data were not available for all four years covered by this analysis.) Scale scores for the composite ACT test (covering English, mathematics, reading and science) range from 1 to 36. With district permission, the College Board and ACT provided mean test scores for each district for 2005 through 2008, along with the number of seniors who had ever taken the test (regardless of when they took the test during high school). The most recent test scores were provided.

Another measure of college readiness is the extent to which students take and pass Advanced Placement (AP) examinations. These examinations provide a standardized measure of student performance in college-level courses taken while in high school. AP grades are reported on a five-point scale:

- 5 = Extremely well qualified
- 4 = Well qualified
- 3 = Qualified (equivalent to passing)
- 2 = Possibly qualified
- 1 = No recommendation

Again with permission from each district, the College Board provided data for the district for 2005 through 2008 on the number of AP examinations at each score level and on the number of juniors and seniors who took the test. MPR staff used these numbers to calculate percentages of AP examinations with scores of three or above (equivalent to pass rates) for each district.

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The College Board and ACT do not calculate test participation rates. MPR staff calculated participation rates using enrollment data obtained from the federal Common Core of Data (CCD) for 11th- and 12th-graders, as appropriate, in combination with the number of students taking the different tests.

### Adequate Yearly Progress (AYP) Data

The data presented indicate the percentage of schools in each district and state that met federal AYP requirements in 2005 through 2008 under the No Child Left Behind (NCLB) legislation. Also presented is an indicator of whether the district met its overall AYP target in the given year and additional AYP detail for student subgroups, where available. These data were obtained from state and local education agency websites.

### Data Analysis Methods

The 2009 Broad Prize data report presents data collected on district characteristics, background on state tests and AYP. In addition, MPR staff analyzed the above-described data on student achievement to develop measures of the following: achievement gaps, district proficiency rates compared with the state, standardized residuals, graduation rates and college readiness. Trend data are presented where available, as are “performance” and “improvement” measures. Each data report section is explained here and the relevant report page numbers are indicated in parentheses. Additional explanatory notes are included as footnotes in the data report itself.

MPR staff analyzed the data on student achievement described above to develop measures of the following:

- District and state proficiency rates on state reading and mathematics tests by education level (elementary, middle and high school) for all students, racial/ethnic subgroups—African American, Asian, Hispanic and White—and low-income and non-low-income subgroups.
- Achievement gaps between Whites and other racial/ethnic groups—African Americans and Hispanics—and between low-income and non-low-income students, and the progress that is being made in closing these gaps.
- Comparing the performance of all students, African-American, Hispanic, and low-income students in a district with their state peers, at the proficient or above level, and at the below proficient, proficient, and advanced levels on state tests.
- Expected versus actual performance on state tests, taking into consideration differences in state tests and the proportion of low-income students in each district.
- High school graduation rates.
- College readiness.

These are explained below.

## Technical Notes and Methodology

### Background Information (page 2)

#### Description of District: 2004–2007

Background information on the finalists is presented in this section. These data were generally obtained from the U.S. Department of Education’s Common Core of Data (CCD). Demographic percentages were calculated using enrollment counts. The minority percentages were calculated as the sum of non-White enrollments divided by the total district enrollment. Percent minority may not equal 100 percent minus percent White due to the small amounts of missing race/ethnicity data in some districts.

The information in the table is organized as follows:

First column: Lists the district characteristics, student characteristics and types of expenditures shown in the table

Remaining columns: Lists data for each year for which data were available (2004, 2005, 2006 and 2007)

#### State Test Information: 2005–2008

Key indicators of student performance include scores on state-mandated achievement tests and trends in scores over time. The state test information shows the tests and grades that were included in The 2009 Broad Prize analysis. The table notes indicate whether any tests were not comparable with other years, and may provide additional information. Non-comparable tests were not included in calculations of “change” or “average change” on pages 8 through 13. Because of the “relative” nature of standardized residuals, however, data for all tests were included in calculations of “overall performance” and “average change” on pages 14 and 15.

The information in the table is organized as follows:

First column: Lists the subject (reading and math) and level (elementary, middle and high school)

Second column: Specifies the test

Remaining columns: Specifies the grades included in the analysis for 2005, 2006, 2007, and 2008

### Trends in Proficiency Rates (pages 3–7)

Test score data in reading and mathematics were collected from each state for 2005 through 2008. These data were used to calculate the percentage of students scoring at or above proficiency on their state tests in reading and mathematics in each grade. Weighted by the number of test takers at each grade level, these data on student achievement were aggregated across elementary grades (third through fifth), middle grades (sixth through eighth), and high school grades (ninth through 12th), where available.

District and state trends in proficiency are shown for all students in reading and math (page 3). Trends are also disaggregated by race/ethnicity (pages 4–5) and income status (pages 6–7) for both the district and state.

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The “state” proficiency rates in these analyses generally excluded the district’s results. That is, unless otherwise indicated, district proficiency rates were removed from state averages to produce “rest of state” proficiency rates for comparison purposes. This approach was particularly important in cases where very large eligible districts enrolled a significant proportion of the population in a state and would otherwise have been compared largely with itself. In states with multiple eligible districts, the “state” proficiency rates will vary, because each district was compared separately with all other districts in the state except itself.

Non-comparable test data are not included in trend lines. Data were suppressed if a subgroup represented less than 5 percent of the test takers in a subject at a level (elementary, middle, high school) or if the data were unreliable.

### Trends in Overall Reading and Mathematics Proficiency (page 3)

Six different trend charts, with data for 2005, 2006, 2007, and 2008, are shown as follows:

- Left side: District reading and mathematics proficiency trend lines for all students at the elementary, middle and high school levels
- Right side: State reading and mathematics proficiency trend lines for all students at the elementary, middle and high school levels

### Race/Ethnicity Trends in Reading and Mathematics Proficiency (pages 4–5)

For each subject, six different trend charts, with data for 2005, 2006, 2007, and 2008, are shown as follows:

- Left side: District proficiency trend lines for White, African-American, Asian, and Hispanic students at the elementary, middle and high school levels
- Right side: State proficiency trend lines for White, African-American, Asian, and Hispanic students at the elementary, middle and high school levels

### Income Status Trends in Reading and Mathematics Proficiency (pages 6–7)

For each subject, six different trend charts, with data for 2005, 2006, 2007, and 2008, are shown as follows:

- Left side: District proficiency trend lines for all students, low-income, and non-low-income students at the elementary, middle and high school levels
- Right side: State proficiency trend lines for all students, low-income, and non-low-income students at the elementary, middle and high school levels

### Proficiency Data Summaries (pages 8 and 10)

Percentages of students scoring at or above proficiency on the state tests between 2005 and 2008 are shown for reading on page 8 and for math on page 10 for both the district and the state. As indicated above, the “state” proficiency rates in these analyses generally excluded the district’s results. That is, unless otherwise indicated, district proficiency rates were removed from state averages to produce “rest of state” proficiency rates for comparison purposes.

## Technical Notes and Methodology

The tables also show calculations of improvement over time. Simple change is calculated as the difference between 2005 and 2008, between 2006 and 2008, and between 2007 and 2008. Where data for one or two years in the pair were not available, not comparable, or suppressed, these change calculations could not be performed.

In addition, improvement or “average change” was calculated as the slope of the best fit line among the available data points for 2005 through 2008. The slope was generally determined by regressing the available proficiency rates on year. If only one data point was available, or if data were missing for both 2007 and 2008, average change was not calculated.

Data could be missing either because they were not available (indicated by “—”) or because they were suppressed (indicated by “+”). Data were suppressed if a subgroup represented less than five percent of the test takers in a subject at a level (elementary, middle, high school) or if the data were unreliable. Data that were not comparable with other years, due, for example, to changes in the state test as described above, appear in italics and were treated in calculations as missing data (and the missing result is indicated by “#”).

Calculations were performed on unrounded numbers. Positive change values appear in color.

### Reading and Mathematics Proficiency Data Summary (pages 8 and 10)

The information in the tables is organized as follows:

First column:	Subgroups are specified for the district and rest of state for each of the three levels (elementary, middle and high school)
Second column:	Proficiencies are specified for the 2005 academic year
Third column:	Proficiencies are specified for the 2006 academic year
Fourth column:	Proficiencies are specified for the 2007 academic year
Fifth column:	Proficiencies are specified for the 2008 academic year
Sixth column:	Change in proficiency is shown for the 2008 academic year minus the 2005 academic year
Seventh column:	Change in proficiency is shown for the 2008 academic year minus the 2006 academic year
Eighth column:	Change in proficiency is shown for the 2008 academic year minus the 2007 academic year
Ninth column:	The “average change” calculation is shown. “Average change” was calculated as the slope of the best fit line among the available data points for 2005 through 2008.

### Proficiency Gaps (pages 9 and 11)

Measures of gap closures are shown for reading on page 9 and for math on page 11. Two types of comparisons were made when calculating achievement gaps:

Racial/Ethnic Gaps:	These compared the performance of African-American and Hispanic students with that of White students.
Income Gaps:	These compared the performance of low-income students with that of non-low-income students.

Three types of gaps were measured:

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### Internal District Gap

This measure calculates the gap in performance between a district's disadvantaged group and the district's advantaged group. Some caution must be exercised in comparing internal gaps across districts because these comparisons may be distorted by the following factors:

- The relative absence of an advantaged group in some districts (e.g., few White or few non-low-income students). To address this issue, internal gaps were not calculated in districts where either of the groups being compared represented less than 5 percent of the district's test-takers in a given subject and at a given level.
- Differences between districts in the composition of the "advantaged" or "disadvantaged" groups (e.g., high-income Whites in one district and moderate-income Whites in another).
- Higher than average performance or improvement by the advantaged group in some districts and lower than average performance or improvement by the advantaged group in others (which could cause districts with lower performing advantaged students to appear to be doing a better job of "closing the gap").
- Ceiling or floor effects, which can distort the comparison of gaps across states.

Gaps are represented by negative numbers and the closing of such gaps is represented by positive numbers. For example, if a district's African-American students perform 30 percentage points below the district's White students, this gap is represented by  $-30$ . If the gap closes to  $-10$  in subsequent years, then the gap closure measure is the later year's gap minus the earlier year's gap ( $-10$  minus  $-30$  equals  $+20$ ), meaning that the gap between African-American and White students has closed by 20 percentage points.

### Internal District versus Internal State Gap

This measure corresponds to the district's internal gap minus the state's internal gap. The district's internal gap is defined as the performance of the district's disadvantaged group minus the performance of the district's advantaged group. The state's internal gap is defined as the performance of the state's disadvantaged group minus the performance of the state's advantaged group. As described above, the "state" internal gaps against which district internal gaps were compared generally excluded the district's results. That is, unless otherwise indicated, district proficiency rates were removed from state averages to produce "rest of state" values for comparison purposes.

Positive numbers indicate that the district outperformed the state on the measure. For example, if the district's Hispanic students are performing 10 percentage points below the district's White students, but the state's Hispanic students are performing 15 percentage points below the state's White students, then the internal district gap is 5 percentage points smaller than the internal state gap.

By similar reasoning, a positive change in this measure over time for Hispanic students would indicate that the district's Hispanics are improving faster relative to the district's Whites than the state's Hispanics are improving relative to the state's Whites.

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### External Gap: District Disadvantaged versus State Advantaged

This measure was used to compare the performance of the district's disadvantaged group with that of the state's advantaged group. Thus, if 30 percent of District A's Hispanic students, 40 percent of District B's Hispanic students, and 50 percent of the state's White students are proficient on the state test, District A's external gap for Hispanics is 30 percent minus 50 percent (or  $-20$  percentage points), and District B's external gap for Hispanics is 40 percent minus 50 percent (or  $-10$  percentage points). As described above, the "state" internal gaps against which district internal gaps were compared generally excluded the district's results. That is, unless otherwise indicated, district proficiency rates were removed from state averages to produce "rest of state" values for comparison purposes. Note that comparing two districts' external gaps in the same state is virtually the same as comparing the performance of their disadvantaged groups except that the "state's" advantaged proficiency against which the district's disadvantaged group was compared was not exactly the same for each district.

External gap statistics are generally negative numbers, but improvement in external gaps (improvement in the performance of the district's disadvantaged students relative to the state's advantaged students) are shown as positive numbers.

An illustration of the three achievement gap measures follows:

	2005 Proficiency Rate		2008 Proficiency Rate	
	District	State	District	State
Low-income students	20	25	35	30
Non-low-income students	50	60	55	65

In this example, the gap measures would be:

#### **Internal District Gap**

- 2005 internal gap:  $-30$  (equals 20 minus 50)
- 2008 internal gap:  $-20$  (equals 35 minus 55)
- 2005–2008 change in internal gap:  $+10$ . This means that the district has closed its income gap by 10 percentage points since 2005.

#### **Internal District versus Internal State Gap**

- 2005 internal state gap:  $-35$  (equals 25 minus 60)
- 2008 internal state gap:  $-35$  (equals 30 minus 65)
- 2005–2008 change in internal state gap:  $0$ . This means that the state's income gap has not changed since 2005.
- 2005 internal district vs. internal state gap:  $+5$  (equals  $-30$  minus  $-35$ )
- 2008 internal district vs. internal state gap:  $+15$  (equals  $-20$  minus  $-35$ )
- 2005–2008 change in internal district vs. internal state gap:  $+10$ . This means that the district's low-income gap has improved 10 percentage points more than its state gap since 2005.

## Technical Notes and Methodology

### ***External Gap: District Disadvantaged versus State Advantaged***

- 2005 external gap: -40 (equals 20 minus 60)
- 2008 external gap: -30 (equals 35 minus 65)
- 2005–2008 change in external gap: +10. This means that the district's low-income performance has improved relative to the performance of the state's non-low-income group by 10 percentage points since 2005.

The tables also show calculations of improvement over time. Simple change is calculated as the difference between 2005 and 2008, between 2006 and 2008, and between 2007 and 2008. Where data for one or two years in the pair were not available, not comparable, or suppressed, these change calculations could not be performed.

In addition, improvement or "average change" was calculated as the slope of the best fit line among the available data points for 2005 through 2008. If only one data point was available, or if data were missing for both 2007 and 2008, average change was not calculated. Data could be missing either because they were not available (indicated by "—") or because they were suppressed (indicated by "†"). Data were suppressed if a subgroup represented less than 5 percent of the test takers in a subject at a level (elementary, middle, high school) or if the data were unreliable. Data that were not comparable with other years, due, for example, to changes in the state test as described above, appear in italics and were treated in calculations as missing data (and the missing result is indicated by "‡"). Calculations were performed on unrounded numbers.

An internal district gap was considered to be closing if the district's disadvantaged group proficiency was increasing and the district's advantaged group proficiency was either steady or increasing. The gap was closing because the district's disadvantaged group proficiency was increasing at a faster rate than the district's advantaged group proficiency.

An internal district vs. internal state gap was considered to be closing if the district's disadvantaged group proficiency was increasing, the district's advantaged group proficiency was either steady or increasing, and the internal district gap was closing at a faster rate than the state internal gap.

An external gap was considered to be closing if the district's disadvantaged group proficiency was increasing at a faster rate than the state's advantaged group proficiency.

When a gap is considered to be closing, the average change value appears in color.

To identify districts with the smallest gaps, decile ranks based on gaps for all districts in a state were computed. Decile ranks could only be calculated for internal district gaps and ranged from 1 for the smallest gaps to 10 for the largest gaps in a state. Gaps that had a decile rank of 1 or 2 were considered to be "small." Decile ranks of 1 or 2 appear in color.

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### ***Important Note Regarding Achievement Gap Data***

Caution must be used when looking at the gap measures for districts across states because the three gap measures are not standardized and are even more vulnerable than are standardized measures to ceiling and floor effects.

### **Reading and Math Proficiency Gaps (pages 9 and 11)**

The information in the tables is organized as follows:

First column:	The internal district gap, internal district vs. internal state gap, and external gap are specified with regard to comparing the disadvantaged vs. advantaged groups (African-American vs. White, Hispanic vs. White, and low-income vs. non-low-income students) at each of the three levels (elementary, middle and high school)
Second column:	Gaps are specified for the 2005 academic year
Third column:	Gaps are specified for the 2006 academic year
Fourth column:	Gaps are specified for the 2007 academic year
Fifth column:	Gaps are specified for the 2008 academic year
Sixth column:	Change in the gap is shown for the 2008 academic year minus the 2005 academic year
Seventh column:	Change in the gap is shown for the 2008 academic year minus the 2006 academic year
Eighth column:	Change in the gap is shown for the 2008 academic year minus the 2007 academic year
Ninth column:	The “average change” calculation is shown. “Average change” was calculated as the slope of the best fit line among the available data points for 2005 through 2008.
Tenth column:	The within-state decile rank of the 2008 internal district gap is shown. Decile ranks range from 1 for the smallest gaps in the state to 10 for the largest.

### **Comparisons of District and State Performance (pages 12 and 13)**

Tables on these pages compare the performance of seven subgroups (all students, African-American, Asian, Hispanic, White, low-income, and non-low-income students) in a district with their state peers in reading (on page 12) and mathematics (on page 13). Unlike the regression analyses, which appear on pages 14 and 15, these analyses directly compare district and state performance and do not take into account district poverty levels. These comparisons focus on the district’s performance on the state test at the below proficient, proficient and advanced levels, as well as at the combined proficient or above level.<sup>3</sup>

The table shows district and state performance in 2008 across the four proficiency categories as well as average change in these categories for the years 2005, 2006, 2007 and 2008. “Average change” was calculated as the slope of the best fit line among the available data points for 2005 through 2008. The slope was generally determined by regressing the available proficiency rates on year. If only one data point was available, or if data were missing for both 2007 and 2008, average change was not calculated.

<sup>3</sup> Below proficient” may combine any proficiency categories the state defines as not meeting proficiency standards. The “advanced” level was defined as the highest performance level above “proficient” on a state’s test.

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The “state” proficiency rates against which the district proficiency rates were compared in this section generally excluded the district’s results. That is, unless otherwise indicated, district proficiency rates were removed from state averages to produce “rest of state” proficiency rates for comparison purposes. This approach was particularly important in cases where very large eligible districts enrolled a significant proportion of the population in a state and would otherwise have been compared largely with itself. In states with multiple eligible districts, the “state” proficiency rates will vary, because each district was compared separately with all other districts in the state except itself.

The 2008 performance and the improvement, or “average change,” measures for all subgroups within each district were compared with the performance and improvement of their peers in the rest of the state. At the proficient, advanced, and proficient or above levels, the district outperformed the state when the percentage of students performing at that level in 2008 was *greater* than the state’s. Similarly, at these same levels, the district out-improved the state when the average change rate was *greater* than the state’s. At the below proficient level, the district outperformed the state when the percentage of students performing at that level in 2008 was *lower* than the state’s, and the district out-improved the state when the average change rate was *lower* than the state’s. Outperformance comparisons were performed on unrounded numbers, and instances of the district outperforming or out-improving the state by .5 percent age points or more appear in color.

The lower, shaded portion of the table shows the counts of district outperformances out of the number of available comparisons for each student group.

Test data were suppressed if they were deemed unreliable or if the subgroup being reported at a given level represented less than 5 percent of the test-takers at that level. Data that were not comparable with other years, due, for example, to changes in the state test as described above, appear in italics and were treated in calculations as missing data (and the missing result is indicated by “+”). Average change calculations were performed on unrounded numbers.

### Comparisons of District and State Performance in Reading and Mathematics (pages 12 and 13)

The information in the tables is organized as follows:

- First column: Subgroups are specified for the district and rest of state for each of the three levels (elementary, middle and high school)
- Second column: Percentages of students performing in the below proficient category are specified for the 2008 academic year
- Third column: Percentages of students performing in the proficient category are specified for the 2008 academic year
- Fourth column: Percentages of students performing in the advanced proficiency category are specified for the 2008 academic year

## Technical Notes and Methodology

- Fifth column: Percentages of students performing in the proficient or above category are specified for the 2008 academic year
- Sixth column: The “average change” in students performing in the below proficient category is shown. “Average change” was calculated as the slope of the best fit line among the available data points for 2005 through 2008.
- Seventh column: The “average change” in students performing in the proficient category is shown. “Average change” was calculated as the slope of the best fit line among the available data points for 2005 through 2008.
- Eighth column: The “average change” in students performing in the advanced proficiency category is shown. “Average change” was calculated as the slope of the best fit line among the available data points for 2005 through 2008.
- Ninth column: The “average change” in students performing in the proficient or above category is shown. “Average change” was calculated as the slope of the best fit line among the available data points for 2005 through 2008.

### Standardized Residuals for Reading and Mathematics (pages 14 and 15)

The trends for standardized residuals in reading and math at the elementary, middle and high school levels are shown on pages 14 and 15.

An ordinary least squares regression (OLS) analysis was conducted to determine the extent to which each Broad Prize-eligible district performed better or worse than other districts in its state given the district’s percentage of low-income students. Specifically, the dependent variable in the regression analysis was the percentage of test takers in a district who were proficient or above on the state test. The independent variable was the percentage of test takers at the relevant level in the district who were low income. The regressions were weighted by district size, as measured by enrollment. This approach gives greater weight in the regressions to larger districts, and avoids possible undue influence of very small districts on the regression results. A separate regression was run for each year of data and each subject (reading and mathematics) for each level (elementary, middle, and high school) within each state.

Running the regressions required obtaining achievement data for all districts in the state, as well as data on the income status of test takers. In a few cases where data were available for the state and the eligible district, but were not available for all districts in the state, or where data on the proportion of test takers who were low income were not available, the regressions could not be run.

For each district, the expected or predicted proficiency level based on the regression was calculated. The difference between the district’s actual percentage of students who scored at or above proficiency and the predicted or expected value is the residual. A positive residual indicates that the district is performing better than expected on the state test given their percentage of low-income students taking the test, while a negative residual indi-

## Technical Notes and Methodology

icates lower-than-expected performance. It should be emphasized that residuals are relative performance measures. A district's performance was assessed relative to that of other districts in the state, not in absolute terms.

Some states changed tests over the period under review, and tests differed from state to state. Consequently, the interpretation of residuals varies. To allow for year-to-year comparisons, separate regressions for each year of data were run. In addition, in order to have a measure with greater comparability, The Broad Prize methodology uses "standardized residuals." A district's standardized residual is calculated by dividing its residual by the standard deviation of all residuals from the state regression.

As an example, a district in Arkansas may have a residual in elementary reading of 5.7 (meaning that they had 5.7 percent more students reach proficiency than their "expected level" given their district's poverty). At the same time, a district in Wisconsin may also have a residual of 5.7 in elementary reading. The assessment of how well each district is performing, however, may not be the same even though both have the same residual. If the majority of districts in Arkansas are within 6 percentage points of the expected performance level, while the majority of districts in Wisconsin are within 2 percentage points of the expected level, then the Wisconsin district is performing much better compared with its peers than the Arkansas district is compared with its peers. Standardizing the residuals helps account for differences in variability across states.

Caution must be exercised in comparing standardized residuals. For example, a district that performs above average in a state that ranks below the national average on NAEP may be performing no better than a district that performs below average in a state that ranks above the NAEP national average.

Separate residuals were calculated for each subject (reading and mathematics), level (elementary, middle and high school) and year (2005, 2006, 2007, and 2008). The table on the lower half of the page shows the standardized residuals values in reading or mathematics at the elementary, middle and high school levels, as well as "average change" and "decile rank." Improvement or "average change" in residuals was calculated as the slope of the best fit line among the available data points for 2005 through 2008. The slope was generally determined by regressing the available standardized residuals on year. If only one data point was available, or if residuals were missing for both 2007 and 2008, average change was not calculated. Decile ranks based on standardized residuals for all districts in a state regression were computed and the average decile ranks for 2007 and 2008 are presented. These average decile ranks were calculated separately by level (elementary, middle, and high school) and subject, and then averaged to produce a single performance measure for each eligible district. Decile ranks of 1–5, which represent the top half of residuals in the state, appear in color.

The table on the lower half of each page also shows the count of positive residuals for reading or mathematics and the count of available measures for that subject. Both tables show the count of positive residuals as well as the count of available residual measures for both subjects (reading and math) combined. Under the "decile rank"

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column, these rows show the average rank for the three education levels. Positive “average change” values and decile ranks in the upper half are shown in color.

### ***Important Note Regarding the Comparison of Residuals for Different Districts***

The analysis provides information on both performance and improvement. In theory, districts with high initial performance levels might be expected to have lower levels of improvement. A district that performed consistently above expectations during all four years, but did not improve, could still be thought of as consistently high performing.

In addition, because states use different tests and different standards of proficiency, individual states may be subject to “floor” or “ceiling” effects. If proficiency levels are generally very high in a state (near 90 percent, for example), then high-performing districts may not be able to show their relative achievement because their proficiency level cannot increase above 100 percent. Similarly, if state proficiency levels are very low, then the relative achievement of the higher performers may be understated because the lower performing districts cannot fall below zero percent.

### **Standardized Residuals Data for Reading and Mathematics (pages 14 and 15)**

The upper half of each page shows three different trend bar charts, with standardized residuals for reading or mathematics for all students in 2005, 2006, 2007, and 2008 at the elementary, middle and high school levels. (Information for reading appears on page 14 and information for mathematics appears on page 15.)

The table on the lower half of each page is organized as follows:

First column:	Standardized residuals for each subject are specified for the district at each of the three levels (elementary, middle and high school) for all students. The table also shows the count of positive residuals and the count of available residual measures for all students in reading or mathematics and the combined counts of positive residuals and the count of available residual measures for both reading and mathematics.
Second column:	Standardized residuals are specified for the 2005 academic year
Third column:	Standardized residuals are specified for the 2006 academic year
Fourth column:	Standardized residuals are specified for the 2007 academic year
Fifth column:	Standardized residuals are specified for the 2008 academic year
Sixth column:	The “average change” calculation is shown. “Average change” was calculated as the slope of the best fit line among the available data points for 2005 through 2008.
Seventh column:	The average decile rank of the residual values for 2007 and 2008 is shown. For the “count of positive residuals” rows, the decile rank is the average rank for the three education levels.

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### High School Graduation Rates (page 16)

Three different methods were used to calculate high school graduation rates, all of which are considered reliable estimates of graduation rates in the absence of longitudinal student-level data.<sup>4</sup> While using longitudinal data generates the most accurate estimates of graduation rates, such information is not currently available in most states. Federal CCD data on enrollments and completions (as described above) were used to generate the graduation rate estimates. While each method uses CCD diploma counts for the graduating class in a given year, the methods rely on different years of enrollment data and, therefore, generate somewhat different results. Further descriptions of the individual methods are provided below.

Trend lines as well as specific graduation rates are shown for 2003 through 2006. The table also shows calculations for improvement over time. Simple change is calculated as the difference between 2003 and 2006, between 2004 and 2006, and between 2005 and 2006. Where data for one or two years in the pair were not available, not comparable or suppressed, these change calculations could not be performed. In addition, improvement or “average change” was calculated as the slope of the best fit line among the available data points for 2003 through 2006. If only one data point was available, or if data were missing for both 2005 and 2006, average change was not calculated.

Data could be missing either because they were not available (indicated by “—”) or because they were suppressed (indicated by “+”). Graduation rates were suppressed if they were deemed unreliable or if a subgroup represented less than 5 percent of the district enrollment. Calculations were performed on unrounded numbers. Positive change values appear in color.

The three different high school graduation rate methods are:

1. The Averaged Freshman Graduation Rate (AFGR)
2. Urban Institute method (a.k.a. Cumulative Promotion Index or CPI)
3. Manhattan Institute method (a.k.a. Greene’s Graduation Indicator or GGI)

The methodology for each of these is explained briefly below.

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<sup>4</sup> State education agencies may use different methods to calculate the graduation rates they report for federal accountability purposes; the graduation rates presented here may not match state-published rates. The three methods used for The Broad Prize provide comparable measures across the 100 eligible districts that are located in 38 states and the District of Columbia.

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### Averaged Freshman Graduation Rate (AFGR)

This method divides the number of students graduating in year  $t$  by an average of the eighth-grade enrollment in year  $t - 4$ , ninth-grade enrollment in year  $t - 3$ , and 10th-grade enrollment in year  $t - 2$ :

$$\text{Graduation Rate} = \frac{G_y}{(S_{8,y-4} + S_{9,y-3} + S_{10,y-2})/3}$$

Where:  $G$  = Number of graduates receiving a regular diploma

$y$  = School year

Denominator = Smoothed estimator for first-time 9th-grade enrollment

### Urban Institute Method

This method assumes that graduation is a process composed of three grade-to-grade promotion transitions (9 to 10, 10 to 11, and 11 to 12), in addition to the graduation event (grade 12 to receipt of a diploma). Each of the transitions is calculated as a probability, based on current-year statistics, by dividing the enrollment of the current year by the enrollment of the previous year for the grade in question. These separate probabilities are then multiplied to produce the probability that a student in that school system will graduate.

$$\text{Graduation Rate} = \frac{S_{10,y+1}}{S_{9,y}} * \frac{S_{11,y+1}}{S_{10,y}} * \frac{S_{12,y+1}}{S_{11,y}} * \frac{G_y}{S_{12,y}}$$

Where:  $S_{\text{grade}}$  = Number of students in a specified grade

$y$  = School year

$G$  = Number of graduates receiving a regular diploma

### Manhattan Institute Method

This calculation estimates an on-time graduation rate. The number of students who receive a diploma at time  $t$  is divided by an estimate of the number of students in the ninth-grade cohort three years earlier. The estimate of the ninth-grade cohort size is a smoothed estimator that takes into account population changes as students migrate between the public and private sectors between eighth and ninth grades, high ninth-grade enrollments due to higher than average retention in the ninth-grade year, and declining enrollment in 10th grade as students begin dropping out. This denominator is also adjusted for enrollment variability due to student mobility among districts and states rather than dropping out.

$$\text{Graduation Rate} = \frac{G_y}{\left(1 + \frac{(S_{9,y} + S_{10,y} + S_{11,y} + S_{12,y}) - (S_{9,y-3} + S_{10,y-3} + S_{11,y-3} + S_{12,y-3})}{S_{9,y-3} + S_{10,y-3} + S_{11,y-3} + S_{12,y-3}}\right)} * \left(\frac{S_{8,y-4} + S_{9,y-3} + S_{10,y-2}}{3}\right)$$

Where:  $G$  = Number of graduates receiving a regular diploma

$y$  = School year

$S_{\text{grade}}$  = Number of students in a specified grade

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A recent National Center for Education Statistics study reported that when calculating a statewide graduation rate, the Averaged Freshman Graduation Rate came closest to approximating a longitudinal graduation rate. The smaller the district, state or student group being analyzed, the less precisely the three graduation rates estimate the true longitudinal graduation rate. The different methodologies sometimes lead to very different results because each uses different types of data from different years. All three have strengths and weaknesses but are considered acceptable.

### **Estimated high school graduation rates table: 2003–2006 (page 16)**

In the upper half of the page, three different trend charts, with data for 2003, 2004, 2005, and 2006, are shown for each of the three different graduation rates for all students and for African-American, Asian, Hispanic and White student subgroups.

In the lower half of the page, the information in the table is organized as follows:

- First column: The three different graduation rate methods, Averaged Freshmen Graduation Rate, Urban Institute Method and Manhattan Institute Method, are specified for all students and for the African-American, Asian, Hispanic and White student subgroups.
- Second column: Graduation rates are specified for the 2003 academic year
- Third column: Graduation rates are specified for the 2004 academic year
- Fourth column: Graduation rates are specified for the 2005 academic year
- Fifth column: Graduation rates are specified for the 2006 academic year
- Sixth column: Change in the graduation rates is shown for the 2006 academic year minus the 2003 academic year
- Seventh column: Change in the graduation rates is shown for the 2006 academic year minus the 2004 academic year
- Eighth column: Change in the graduation rates is shown for the 2006 academic year minus the 2005 academic year
- Ninth column: The “average change” calculation is shown. “Average change” was calculated as the slope of the best fit line among the available data points for 2003 through 2006.

### **College Readiness Data (page 17)**

District-level measures of the college readiness of students include SAT, ACT and Advanced Placement. The table provides measures of performance on these tests and participation rates.

With district permission, College Board and ACT provided SAT (reading and math) test scores and mean ACT (composite) test scores, respectively, for each district for 2005 through 2008. The SAT reading and math scores were combined to produce mean total SAT scores. Mean ACT composite scores were reported as provided. The College Board also provided the number of AP examinations at each score level (1 to 5) for each district for 2005

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through 2008. The percentage of AP tests taken that earned passing scores (3 or above) was calculated. The percent of all AP tests taken with scores of three or above are detailed in this report.

The College Board and ACT do not calculate test participation rates. However, they provided the number of seniors who had taken the SAT and ACT tests (regardless of when they took the test during high school), as well as the number of juniors and seniors who took any AP test in the given year. Participation rates were calculated using these numbers as the numerator and enrollment data for 11th- and 12th-graders from the federal CCD as the denominator.<sup>5</sup>

The tables also show calculations of improvement over time. Simple change is calculated as the difference between 2005 and 2008, between 2006 and 2008, and between 2007 and 2008. Where data for one or two years in the pair were not available or suppressed, these change calculations could not be performed.

The “average change” calculation is shown. “Average change” was calculated as the slope of the best fit line among the available data points for 2005 through 2008. If only one data point was available, or if data were missing for both 2007 and 2008, average change was not calculated. Calculations were performed on unrounded numbers. Positive change values appear in color.

Data were suppressed if they were deemed unreliable. Test scores were suppressed if they were based on the performance of fewer than 15 students, as required by the College Board. Participation rates were suppressed if a subgroup represented less than 5 percent of enrollment in the relevant grades. In addition, subgroup results were suppressed if data on the number of test takers whose race/ethnicity was identified represented less than 90 percent of the total number of test takers for a given test and year.

### Test scores and participation rates on college readiness examinations: 2005–2008 (page 17)

The information in the table is organized as follows:

First column:	The table is divided into the three different college readiness sections: SAT, ACT, and Advanced Placement. Each college readiness section first shows performance measures and then participation rates for all students as well as for the African-American, Asian, Hispanic and White student subgroups.
Second column:	Relevant values are listed for the 2005 academic year
Third column:	Relevant values are listed for the 2006 academic year
Fourth column:	Relevant values are listed for the 2007 academic year
Fifth column:	Relevant values are listed for the 2008 academic year
Sixth column:	Change in values is shown for the 2008 academic year minus the 2005 academic year

<sup>5</sup> Participation rates in 2008 were calculated using 2007 CCD enrollments as the denominator, because 2008 enrollment data were not yet available.

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- Seventh column: Change in values is shown for the 2008 academic year minus the 2006 academic year
- Eighth column: Change in values is shown for the 2008 academic year minus the 2007 academic year
- Ninth column: The “average change” calculation is shown. “Average change” was calculated as the slope of the best fit line among the available data points for 2005 through 2008.

### **Adequate Yearly Progress (AYP) (page 18)**

The upper table shows overall AYP results for 2005, 2006, 2007, and 2008. For each year, the upper rows show the percentage of schools in the district meeting AYP targets and the percentage of schools in the state meeting AYP targets. The lower rows show whether overall AYP targets were met (“Y” for yes, “N” for no) by the levels/categories by which AYP is determined within that state for the given year.

The information in the lower table is organized as follows:

- First column: The breakdown of AYP results in English language arts and in mathematics are specified for the specific student subgroups for which districts and schools are held accountable in the state.
- Second column: AYP proficiency results are listed for 2008 or the most recent year for which results by accountability subgroup were available.
- Third column: AYP participation results are listed for 2008 or the most recent year for which results by accountability subgroup were available