Subgroup Achievement and Gap Trends — Massachusetts

K-12 enrollment — 958,910

The raw data used to develop these state profiles, including data for additional grade levels and years before 2002, can be found on the CEP Web site at www.cep-dc.org. Click on the link on the left labeled State Testing Data. In the list of results that appears, look for the most recent report on student achievement since 2002. Below the name of the report, click on the link for State Profiles and Worksheets. Scroll down the page until you reach the list of states. Click on the Worksheet link for proficiency data or scale score data for a particular state.

Subgroup Achievement Trends and Gap Trends — Key Findings

Summary. In grade 8 (the only grade in which subgroup trends were analyzed by achievement level), Massachusetts showed across-the-board gains—improvements in both reading and math at the basic, proficient and advanced levels for all racial/ethnic subgroups, low income students, and boys and girls. Results on achievement gaps were mixed. Comparable data were available for reading from 2006 through 2009 for grade 8, and from 2005 through 2009 for grade 4 and 10. Math data were available from 2001 through 2009, but the data were not disaggregated for all subgroups in math until 2005.

- ***Notable gains.*** African American and Latino students made notable gains at the proficient level in reading. Asian students showed marked progress in math--41% of Asian students reached the advanced level in math in 2009, compared to 20% of all students.

- ***Mixed picture on math gaps.*** Although achievement gaps between subgroups tended to narrow in reading, there was a mixed picture in math because a number of gaps widened in grade 8; these widened for African American, Latino, and low income students. Although all subgroups improved in math, comparison groups (white and non-low income students) improved at a faster pace.

Data Limitations

Years of comparable percentage proficient data	1999 through 2009: Grades 4, 8, and 10 math; grade 10 English language arts (ELA) 2001 through 2009: Grade 6 math; grades 3, 4, and 7 ELA 2006 through 2009: Grades 3, 5, and 7 math; grades 5, 6, and 8 ELA
Years of data needed to compute effect sizes	Cannot compute effect sizes; no mean scale scores or standard deviations available
Disaggregated data for all subgroups and comparison groups	Massachusetts revised its definitions of racial/ethnic subgroups and advised that data can be considered comparable for racial/ethnic subgroup comparisons from 2005 through 2009. Not available for low-income students until 2005, for students who are *not* low-income until 2006, or for students who are *not* disabled or English language learners (ELLs) until 2007. ELLs are compared with all students in the state because data are not available for the comparison group of students who are *not* ELLs. Numbers of test-takers available beginning in 2007.

Test Characteristics

The characteristics highlighted below are for the state reading and mathematics tests used for accountability under the No Child Left Behind Act (NCLB).

Test(s) used for NCLB accountability	Massachusetts Comprehensive Assessment System (MCAS) MCAS Alternate Assessment (MCAS-Alt)
Grades tested for NCLB accountability	3–8, 10 in ELA and math, as of 2007
State labels for achievement levels	MA uses four achievement levels: Warning/Failing, Needs Improvement, Proficient, and Advanced/Above Proficient. For our analyses we treated Needs Improvement as Basic, Proficient as Proficient, and Advanced/Above Proficient as Advanced.
High school NCLB test also used as an exit exam?	Yes Students in the class of 2010 and beyond must earn a scaled score of 240 (*Proficient*) or higher on the English Language Arts and Mathematics grade 10 tests or retests OR earn a scaled score of 220 to 238 on the English Language Arts and Mathematics tests or

	retests and fulfill the requirements of their Educational Proficiency Plans (EPP) to be eligible to receive a high school diploma. In addition, they must earn a scaled score of 220 (*Needs Improvement)* or higher on one of four high school Science and Technology/Engineering (STE) tests.
First year test used	1998: Grades 4, 8, 10 in math; grade 10 in ELA 2001: Grades 3, 4, 7 in reading/ELA; grade 6 in math 2006: Grades 3, 5, 7 in math; grades 5, 7, 8 in ELA
Time of test administration	Spring (opportunities for retests in fall, spring, and summer for students who did not pass the grade 10 test)
Major changes in testing system (2002–present)	2002: New scaling system adopted 2005–06: Reading/ELA and math tested in all of the grades 3–8 and 10. Prior to 2005-06, reading/ELA was tested in grades 3, 4, 7, and 10, and math was tested in grades 4, 6, 8, and 10. 2006: Absent students without documented medical reasons counted as non-participants in testing; prior to 2006, counted as failing/warning 2006: Test results reported on state Web site for both current and former limited-English-proficient (LEP) students; previously, only results for current LEP students were reported 2006: Reporting of the “regular education” subgroup discontinued

Achievement by Subgroup — Trends at the Middle School Level

Note: The tables in this profile of subgroup achievement and gap trends begin with table 7. Tables 1 through 6 can be found in the companion state profile of general achievement trends.

Table MA-7. Percentages of grade 8 students by racial or ethnic subgroup scoring at the advanced, proficient-and-above, and basic-and-above levels in reading

	Reporting year								Average yearly percentage point gain[1]
Subgroup	2002	2003	2004	2005	2006	2007	2008	2009	
All tested students									
Advanced					12%	12%	12%	15%	1.0
Proficient-and-above					74%	75%	75%	78%	1.3
Basic-and-above					93%	93%	93%	93%	0.0
White									
Advanced					14%	15%	14%	18%	1.3
Proficient-and-above					81%	83%	81%	85%	1.3
Basic-and-above					95%	97%	95%	97%	0.7
African American									
Advanced					3%	4%	4%	6%	1.0
Proficient-and-above					53%	56%	58%	63%	3.3
Basic-and-above					86%	88%	87%	88%	0.7
Latino									
Advanced					2%	3%	3%	4%	0.7
Proficient-and-above					44%	48%	50%	56%	4.0
Basic-and-above					79%	83%	82%	84%	1.7
Asian									
Advanced					20%	19%	22%	28%	2.7
Proficient-and-above					76%	77%	81%	85%	3.0
Basic-and-above					94%	94%	94%	96%	0.7
Native American[2]									
Advanced					7%	6%	8%	8%	0.3
Proficient-and-above					67%	69%	63%	63%	-1.3
Basic-and-above					92%	93%	92%	90%	-0.7

Table reads: The percentage of white 8th graders who scored at the advanced level on the state reading test increased from 14% in 2006 to 18% in 2009. During this period, the average yearly gain in the percentage advanced in reading for white 8th graders was 1.3 percentage points per year.

[1]Averages are subject to rounding error.

[2]The number of students tested in this subgroup at this grade level was fewer than 500 in 2009 or the most recent year with available data, so changes for this subgroup should be interpreted with caution.

Table MA-8. Percentage of grade 8 students by demographic subgroup scoring at the advanced, proficient-and-above, and basic-and-above levels in reading

Subgroup	Reporting year								Average yearly percentage point gain[1]
	2002	2003	2004	2005	2006	2007	2008	2009	
All tested students									
Advanced					12%	12%	12%	15%	1.0
Proficient-and-above					74%	75%	75%	78%	1.3
Basic-and-above					93%	93%	93%	93%	0.0
Low-income students									
Advanced					3%	3%	3%	5%	0.7
Proficient-and-above					52%	54%	54%	61%	3.0
Basic-and-above					85%	86%	85%	88%	1.0
Students with disabilities[3]									
Advanced					1%	1%	1%	2%	0.3
Proficient-and-above					35%	36%	36%	40%	1.7
Basic-and-above					74%	75%	72%	76%	0.7
English language learners[3]									
Advanced					NA	2%	1%	2%	0.0
Proficient-and-above					NA	29%	19%	36%	3.5
Basic-and-above					NA	71%	55%	71%	0.0
Female									
Advanced					17%	17%	17%	20%	1.0
Proficient-and-above					79%	80%	80%	83%	1.3
Basic-and-above					95%	95%	95%	96%	0.3
Male									
Advanced					8%	8%	8%	11%	1.0
Proficient-and-above					70%	71%	71%	75%	1.7
Basic-and-above					91%	92%	91%	92%	0.3

Table reads: The percentage of low-income 8th graders who scored at the advanced level on the state reading test increased from 3% in 2006 to 5% in 2009. During this period, the average yearly gain in the percentage advanced in reading for low-income 8th graders was 0.7 percentage points per year.

[1]Averages are subject to rounding error.

[2]The number of students tested in this subgroup at this grade level was fewer than 500 in 2009 or the most recent year with available data, so changes for this subgroup should be interpreted with caution.

[3]Gap trends for students with disabilities and English language learners should be interpreted with caution because state and federal policy changes may have affected the year-to-year comparability of test results for these subgroups. Average yearly percentage point gains are based on 2006-2009 results.

Table MA-9. Percentages of grade 8 students by racial or ethnic subgroup scoring at the advanced, proficient-and-above, and basic-and-above levels in mathematics

	Reporting year								Average yearly percentage point gain[1]
Subgroup	2002	2003	2004	2005	2006	2007	2008	2009	
All tested students									
Advanced	11%	12%	13%	13%	12%	17%	19%	20%	1.3
Proficient-and-above	34%	37%	39%	39%	40%	45%	49%	48%	2.0
Basic-and-above	67%	67%	71%	69%	71%	75%	76%	76%	1.3
White									
Advanced				15%	14%	20%	22%	24%	2.3
Proficient-and-above				45%	46%	52%	56%	56%	2.8
Basic-and-above				76%	78%	82%	73%	83%	1.8
African American									
Advanced				2%	3%	4%	5%	6%	1.0
Proficient-and-above				14%	17%	19%	24%	24%	2.5
Basic-and-above				43%	47%	53%	55%	55%	3.0
Latino									
Advanced				2%	3%	4%	5%	6%	1.0
Proficient-and-above				13%	15%	18%	22%	22%	2.3
Basic-and-above				39%	44%	48%	50%	51%	3.0
Asian									
Advanced				28%	27%	34%	39%	41%	3.3
Proficient-and-above				57%	59%	65%	68%	68%	2.8
Basic-and-above				80%	83%	87%	86%	88%	2.0
Native American[2]									
Advanced				9%	6%	8%	11%	8%	-0.3
Proficient-and-above				33%	29%	32%	36%	29%	-1.0
Basic-and-above				63%	63%	69%	61%	58%	-1.3

Table reads: The percentage of white 8th graders who scored at the advanced level on the state math test increased from 15% in 2005 to 24% in 2009. During this period, the average yearly gain in the percentage advanced in math for white 8th graders was 2.3 percentage points per year.

[1]Averages are subject to rounding error.

[2]The number of students tested in this subgroup at this grade level was fewer than 500 in 2009 or the most recent year with available data, so changes for this subgroup should be interpreted with caution.

Table MA-10. Percentage of grade 8 students by demographic subgroup scoring at the advanced, proficient-and-above, and basic-and-above levels in mathematics

Subgroup	Reporting year								Average yearly percentage point gain[1]
	2002	2003	2004	2005	2006	2007	2008	2009	
All tested students									
Advanced	11%	12%	13%	13%	12%	17%	19%	20%	1.3
Proficient-and-above	34%	37%	39%	39%	40%	45%	49%	48%	2.0
Basic-and-above	67%	67%	71%	69%	71%	75%	76%	76%	1.3
Low-income students									
Advanced	NA	NA	NA	3%	3%	5%	6%	7%	1.0
Proficient-and-above	NA	NA	NA	17%	17%	21%	25%	25%	2.0
Basic-and-above	NA	NA	NA	46%	48%	54%	55%	56%	2.5
Students with disabilities[3]									
Advanced	1%	1%	2%	2%	1%	2%	2%	3%	0.7
Proficient-and-above	6%	7%	9%	10%	8%	10%	12%	12%	1.3
Basic-and-above	28%	29%	35%	34%	32%	36%	38%	38%	2.0
English language learners[3]									
Advanced	NA	NA	NA	NA	NA	4%	3%	5%	0.5
Proficient-and-above	NA	NA	NA	NA	NA	15%	10%	18%	1.5
Basic-and-above	NA	NA	NA	NA	NA	39%	29%	41%	1.0
Female									
Advanced	10%	12%	12%	13%	13%	17%	19%	20%	1.4
Proficient-and-above	33%	37%	38%	40%	41%	46%	49%	50%	2.4
Basic-and-above	67%	68%	71%	71%	73%	77%	76%	78%	1.6
Male									
Advanced	11%	12%	13%	13%	12%	17%	19%	21%	1.4
Proficient-and-above	34%	37%	39%	38%	39%	44%	49%	48%	2.0
Basic-and-above	67%	66%	71%	68%	69%	73%	75%	75%	1.1

Table reads: The percentage of low-income 8th graders who scored at the advanced level on the state math test increased from 3% in 2005 to 7% in 2009. During this period, the average yearly gain in the percentage advanced in math for low-income 8th graders was 1.0 percentage point per year.

[1]Averages are subject to rounding error.

[2]The number of students tested in this subgroup at this grade level was fewer than 500 in 2009 or the most recent year with available data, so changes for this subgroup should be interpreted with caution.

[3]Gap trends for students with disabilities and English language learners should be interpreted with caution because state and federal policy changes may have affected the year-to-year comparability of test results for these subgroups. Average yearly percentage point gains are based on 2006-2009 results.

Achievement by Subgroup — Gap Trends (Percentages Proficient)

Table MA-11. Subgroup achievement trends in reading by percentages proficient

NOTE: L = larger gain than comparison group. S = smaller gain than comparison group. E = equal gain to comparison group.
If the average annual gain for the subgroup of interest, such as African American students, is larger than the average annual gain for the comparison group, such as white students, this indicates that the achievement gap has narrowed. If the average gain for the subgroup of interest is smaller, this means the gap has widened.

	Grade 4					Grade 8					Grade 10				
Subgroup	Year span	Starting PP	Ending PP	Average annual gain[1]	Gain larger or smaller than comparison group	Year span	Starting PP	Ending PP	Average annual gain[1]	Gain larger or smaller than comparison group	Year span	Starting PP	Ending PP	Average annual gain[1]	Gain larger or smaller than comparison group
All tested students	02-09	54%	53%	-0.1		06-09	74%	78%	1.3		02-09	60%	81%	3.1	
White	05-09	56%	61%	1.3		06-09	81%	85%	1.3		05-09	72%	86%	3.5	
African American	05-09	27%	29%	0.5	S	06-09	53%	63%	3.3	L	05-09	37%	63%	6.5	L
Latino	05-09	22%	28%	1.5	L	06-09	44%	56%	4.0	L	05-09	31%	57%	6.5	L
Asian	05-09	57%	62%	1.3	E	06-09	76%	85%	3.0	L	05-09	64%	82%	4.5	L
Native American	05-09	36%	42%	1.5[2]	L	06-09	67%	63%	-1.3[2]	S	05-09	55%	76%	5.3[2]	L
Not low-income	06-09	59%	66%	2.3		06-09	84%	87%	1.0		06-09	77%	87%	3.3	
Low-income	06-09	27%	29%	0.7	S	06-09	52%	61%	3.0	L	06-09	46%	62%	5.3	L
Not disabled	07-09	64%	62%	-1.0		07-09	84%	87%	1.5		07-09	78%	87%	4.5	
Students with disabilities[3]	07-09	19%	16%	-1.5	S	07-09	36%	40%	2.0	L	07-09	30%	43%	6.5	L
All tested students	07-09	56%	53%	-1.5		07-09	75%	78%	1.5		07-09	71%	81%	5.0	
English language learners[3]	07-09	27%	25%	-1.0	L	07-09	29%	36%	3.5	L	07-09	21%	31%	5.0	E
Female	02-09	60%	60%	0.0		06-09	79%	83%	1.3		02-09	65%	85%	2.9	
Male	02-09	48%	48%	0.0	E	06-09	70%	75%	1.7	L	02-09	54%	77%	3.3	L

Table reads: In 2005, 56% of white 4th graders and 27% of African American 4th graders scored at the proficient level on the state reading test. In 2009, 61% of white 4th graders and 29% of African American 4th graders scored at the proficient level in reading. Between 2005 and 2009, the percentage proficient improved at an average rate of 1.3 percentage points per year for white students and 0.5 percentage points per year for African American students, indicating a smaller rate of

gain and a widening of the achievement gap for African American 4th graders.

[1]Numbers in these columns are subject to rounding error.

[2]The number of students tested in this subgroup at this grade level was fewer than 500 in 2009 or the most recent year with available data, so changes for this subgroup should be interpreted with caution.

[3]Gap trends for students with disabilities and English language learners should be interpreted with caution because state and federal policy changes may have affected the year-to-year comparability of test results for these subgroups.

Table MA-12. Subgroup achievement trends in mathematics by percentages proficient

NOTE: L = larger gain than comparison group. S = smaller gain than comparison group. E = equal gain to comparison group.
If the average annual gain for the subgroup of interest, such as African American students, is larger than the average annual gain for the comparison group, such as white students, this indicates that the achievement gap has narrowed. If the average gain for the subgroup of interest is smaller, this means the gap has widened.

	Grade 4					Grade 8					Grade 10				
Subgroup	Year span	Starting PP	Ending PP	Average annual gain[1]	Gain larger or smaller than comparison group	Year span	Starting PP	Ending PP	Average annual gain[1]	Gain larger or smaller than comparison group	Year span	Starting PP	Ending PP	Average annual gain[1]	Gain larger or smaller than comparison group
All tested students	02-09	39%	48%	1.2		02-09	34%	48%	2.0		02-09	44%	75%	4.5	
White	05-09	46%	54%	2.0		05-09	45%	56%	2.8		05-09	68%	81%	3.3	
African American	05-09	16%	25%	2.3	L	05-09	14%	24%	2.5	S	05-09	29%	51%	5.5	L
Latino	05-09	16%	25%	2.3	L	05-09	13%	22%	2.3	S	05-09	29%	48%	4.8	L
Asian	05-09	53%	65%	3.0	L	05-09	57%	68%	2.8	E	05-09	74%	86%	3.0	S
Native American	05-09	28%	36%	2.0[2]	E	05-09	33%	29%	-1.0[2]	S	05-09	47%	67%	5.0[2]	L
Not low-income	06-09	49%	58%	3.0		06-09	50%	60%	3.3		06-09	73%	82%	3.0	
Low-income	06-09	21%	28%	2.3	S	06-09	17%	25%	2.7	S	06-09	44%	54%	3.3	L
Not disabled	07-09	55%	55%	0.0		07-09	53%	57%	2.0		07-09	76%	81%	2.5	
Students with disabilities[3]	07-09	17%	16%	-0.5	S	07-09	10%	12%	1.0	S	07-09	31%	37%	3.0	L
All tested students	07-09	48%	48%	0.0		07-09	45%	48%	1.5		07-09	68%	75%	3.5	
English language learners[3]	07-09	26%	26%	0.0	E	07-09	15%	18%	1.5	E	07-09	34%	38%	2.0	S
Female	02-09	40%	49%	1.3		02-09	33%	50%	2.4		02-09	43%	74%	4.4	
Male	02-09	39%	48%	1.3	E	02-09	34%	48%	2.0	S	02-09	44%	74%	4.3	S

Table reads: In 2005, 46% of white 4th graders and 16% of African American 4th graders scored at the proficient level on the state math test. In 2009, 54% of white 4th graders and 25% of African American 4th graders scored at the proficient level in math. Between 2005 and 2009, the percentage proficient improved at an average rate of 2.0 percentage points per year for white students and 2.3 percentage points per year for African American students, indicating a larger rate of gain and a narrowing of the achievement gap for African American 4th graders.

[1]Numbers in these columns are subject to rounding error.

[2]The number of students tested in this subgroup at this grade level was fewer than 500 in 2009 or the most recent year with available data, so changes for this subgroup should be interpreted with caution.

[3]Gap trends for students with disabilities and English language learners should be interpreted with caution because state and federal policy changes may have affected the year-to-year comparability of test results for these subgroups.

Table MA-13. Numbers of test-takers

Subgroup	Subject	Grade 4					Grade 8					Grade 10				
		Year span	# of test-takers start year	# of test-takers end year	Change in # of test-takers over time	% of test-takers in subgroup in end year	Year span	# of test-takers start year	# of test-takers end year	Change in # of test-takers over time	% of test-takers in subgroup in end year	Year span	# of test-takers start year	# of test-takers end year	Change in # of test-takers over time	% of test-takers in subgroup in end year
All tested students	Reading	07-09	70,517	70,471	-0.1%	100.0%	07-09	74,433	73,140	-1.7%	100.0%	07-09	72,471	70,383	-2.9%	100.0%
	Math	07-09	70,645	70,709	0.1%	100.0%	07-09	74,319	73,170	-1.5%	100.0%	07-09	71,692	70,194	-2.1%	100.0%
White	Reading	07-09	50,748	49,461	-2.5%	70.2%	07-09	54,020	52,186	-3.4%	71.4%	07-09	53,322	51,126	-4.1%	72.6%
	Math	07-09	50,850	49,610	-2.4%	70.2%	07-09	53,974	52,203	-3.3%	71.3%	07-09	52,941	50,995	-3.7%	72.6%
African American	Reading	07-09	5,427	5,567	2.6%	7.9%	07-09	6,412	6,119	-4.6%	8.4%	07-09	6,056	5,947	-1.8%	8.4%
	Math	07-09	5,434	5,599	3.0%	7.9%	07-09	6,399	6,157	-3.8%	8.4%	07-09	5,957	5,950	-0.1%	8.5%
Latino	Reading	07-09	9,217	10,138	10.0%	14.4%	07-09	9,408	9,692	3.0%	13.3%	07-09	8,511	8,564	0.6%	12.2%
	Math	07-09	9,247	10,188	10.2%	14.4%	07-09	9,362	9,686	3.5%	13.2%	07-09	8,303	8,519	2.6%	12.1%
Asian	Reading	07-09	3,370	3,483	3.4%	4.9%	07-09	3,163	3,494	10.5%	4.8%	07-09	3,297	3,282	-0.5%	4.7%
	Math	07-09	3,391	3,498	3.2%	4.9%	07-09	3,164	3,487	10.2%	4.8%	07-09	3,261	3,285	0.7%	4.7%
Native American	Reading	07-09	232	201	-13.4%	0.3%	07-09	236	215	-8.9%	0.3%	07-09	187	181	-3.2%	0.3%
	Math	07-09	229	200	-12.7%	0.3%	07-09	238	218	-8.4%	0.3%	07-09	184	182	-1.1%	0.3%
Low-income	Reading	07-09	21,823	23,198	6.3%	32.9%	07-09	22,257	22,934	3.0%	31.4%	07-09	18,294	19,316	5.6%	27.4%
	Math	07-09	21,841	23,310	6.7%	33.0%	07-09	22,173	22,948	3.5%	31.4%	07-09	17,910	19,267	7.6%	27.4%
Students w/ disabilities	Reading	07-09	12,827	12,681	-1.1%	18.0%	07-09	13,179	13,315	1.0%	18.2%	07-09	11,465	11,369	-0.8%	16.2%
	Math	07-09	12,858	12,743	-0.9%	18.0%	07-09	13,120	13,314	1.5%	18.2%	07-09	11,241	11,389	1.3%	16.2%
English language learners	Reading	07-09	6,127	6,606	7.8%	9.4%	07-09	3,824	3,724	-2.6%	5.1%	07-09	3,502	3,227	-7.9%	4.6%
	Math	07-09	6,149	6,645	8.1%	9.4%	07-09	3,821	3,741	-2.1%	5.1%	07-09	3,422	3,261	-4.7%	4.6%
Female	Reading	07-09	34,267	34,365	0.3%	48.8%	07-09	35,925	35,548	-1.0%	48.6%	07-09	35,610	34,574	-2.9%	49.1%
	Math	07-09	34,355	34,368	0.0%	48.6%	07-09	35,878	35,567	-0.9%	48.6%	07-09	35,304	34,478	-2.3%	49.1%
Male	Reading	07-09	36,210	36,062	-0.4%	51.2%	07-09	38,449	37,539	-2.4%	51.3%	07-09	36,781	35,727	-2.9%	50.8%
	Math	07-09	36,280	36,216	-0.2%	51.2%	07-09	38,397	37,564	-2.2%	51.3%	07-09	36,360	35,651	-1.9%	50.8%

Table reads: In 2007, 50,748 students in the white subgroup took the state 4th grade reading test. By 2009, the number of white test-takers had fallen to 49,461 students, a decrease of 2.5%. In 2009, the white subgroup made up 70.2% of the 70,471 4th graders taking the reading test that year.

Note: **Bold** type indicates that the number of students tested in this subgroup at this grade level was fewer than 500 in 2009 or the most recent year with available data.

Key Terms

Percentage proficient (and above) — The percentage of students in a group who score at or above the cut score for "proficient" performance on the state test used to determine progress under NCLB. The Act requires states to report student test performance in terms of at least three achievement levels: basic, proficient, and advanced. Adequate yearly progress determinations are based on the percentage of students scoring at the proficient level and above.

Percentage basic (and above) — The percentage of students in a group who score at or above the cut score for "basic" performance on the state test used to determine progress under NCLB.

Percentage advanced — The percentage of students in a group who reach or exceed the cut score for "advanced" performance on the state test used to determine progress under NCLB.

Moderate-to-large gain — For the percentage basic, proficient, or advanced, an average gain of 1 or more percentage points per year. For effect size, an average gain of 0.02 or greater per year.

Slight gain — For the percentage basic, proficient, or advanced, an average gain of less than 1 percentage point per year. For effect size, an average gain of less than 0.02 per year.

Moderate-to-large decline — For the percentage basic, proficient, or advanced, an average decline of 1 or more percentage points per year. For effect size, an average decline of 0.02 or greater per year.

Slight decline — For the percentage basic, proficient, or advanced, an average decline of less than 1 percentage point per year. For effect size, an average decline of less than 0.02 per year.

Effect size — A statistical tool that conveys the amount of difference between test results using a common unit of measurement which does not depend on the scoring scale for a particular test.

Accumulated annual effect size — The cumulative gain in effect size over a range of years.

Mean scale score — The arithmetical average of a group of test scores, expressed on a common scale for a particular state's test. The mean is calculated by adding the scores and dividing the sum by the number of scores.

Standard deviation — A measure of how much test scores tend to deviate from the mean—in other words, how spread out or bunched together test scores are. If students' scores are bunched together, with many scores close to the mean, then the standard deviation will be small. If scores are spread out, with many students scoring at the high or low end of the scale, then the standard deviation will be large.

Cautions and Explanations

Different labels for achievement levels — For consistency, all of the state profiles developed for this report use a common set of labels (basic, proficient, and advanced) for the main achievement levels required by NCLB. In practice, however, some states may use different labels, such as "meets standard" instead of proficient, and some states have established additional achievement levels beyond those required by NCLB.

Different names for subgroups — For the sake of consistency and ease of data tabulation, all of the state profiles developed for this report use a common set of names for the major student subgroups. In practice, however, states use various names for subgroups that may differ from those used here (such as using "Hispanic" instead of "Latino," or "special education students" instead of "students with disabilities"). Moreover, a few states separately track the performance of subgroups not included in the analyses for this report.

Special caution for students with disabilities and English language learners — Trends for students with disabilities and English language learners should be interpreted with caution because changes in federal guidance and state accountability plans may have altered which students in these subgroups are tested for accountability purposes, how they are tested, and when their test scores are counted as proficient under NCLB. These factors could affect the year-to-year comparability of test results.

Inclusion of former English language learners — In many states, the subgroup of English language learners (also known as limited English proficient students) includes students who were formerly English language learners but who have achieved English language proficiency or fluency in the last two years. Federal NCLB regulations permit states to include these formerly ELL students (sometimes referred to as "redesignated fluent English proficient" students) in the ELL subgroup for up to two years for purposes of NCLB accountability.

Limitations of percentage proficient measure — The percentage proficient, the main gauge of student performance under NCLB, can be easily understood and gives a snapshot of how many students have met their state's performance expectations. But it also has several limitations as a measure of student achievement. Users of percentage proficient data should keep in mind these limitations, particularly the following:

* "Proficient" means different things across different states. States vary widely in curriculum, learning expectations, and tests, and state tests differ considerably in their difficulty and cut scores for proficient performance.
* Although this study has taken steps to avoid comparing test data where there have been "breaks" in comparability resulting from new tests, changes in content standards, revised cut scores, or other major changes in testing programs, the year-to-year comparability of test results in the same state may still be affected by less obvious policy and demographic changes.
* Changes in student performance may occur that are not reflected in percentage proficient data, such as an increase in the number of students reaching performance levels below and above proficient (such as the basic or advanced levels).
* The size of the achievement gaps between various subgroups depends in part on where a state sets its cut score for proficiency. For example, if a proficiency cut score is set so high that almost nobody reaches it or so low that almost everyone reaches it, there will be little apparent achievement gap. By contrast, if the cut score is closer to the mean test score, the gaps between subgroups will be more apparent.

Difficulty of attributing causes — Although the tables in this profile show trends in test scores since the enactment of NCLB, one cannot assume that these trends have occurred *because* of NCLB. It is always difficult to determine a cause-and-effect relationship between test score trends and any specific education policy or program due to the many federal, state, and local reforms undertaken in recent years and due to the lack of an appropriate "control" group of students not affected by NCLB.