

## Subgroup Achievement and Gap Trends — Missouri

*K-12 enrollment — 892,283*

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](http://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), Missouri 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 from 2006 through 2009 for grades 4 and 8 in reading and math. In 2008-09, Missouri changed its high school testing program to end of course exams, and therefore trend data were unavailable at that grade level.

- **Mixed picture on achievement gaps.** Although all subgroups improved in both math and reading, comparison groups (white and non-low income students) improved at a faster pace. By the percentage proficient measure, roughly half of gaps narrowed and half widened. However, by the mean (average) score measure, most achievement gaps narrowed.

## Data Limitations

Years of comparable percentage proficient data

Grades 3-8: 2006 through 2009  
 Grade 11 Communication Arts: 2006 through 2008; End-of-course English II starting in 2009  
 Grade 10 Math: 2006 through 2008; End-of-course Algebra I starting in 2009

Years of comparable mean scale score data

Grades 3-8: 2006 through 2009  
 Grade 11 Communication Arts: 2006 through 2008; End-of-course English II starting in 2009  
 Grade 10 Math: 2006 through 2008; End-of-course Algebra I starting in 2009

## 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

Missouri Assessment Program (MAP)  
 Missouri Assessment Program—Alternate (MAP-A)

Grades tested for NCLB accountability

Reading: 3–8, End-of-Course English II  
 Math: 3–8, End-of-course Algebra I

State labels for achievement levels

MO uses four achievement levels: Below Basic, Basic, Proficient, and Advanced. For our analyses we treated Basic as Basic, Proficient as Proficient, and Advanced as Advanced.

High school NCLB test also used as an exit exam?

No

First year test used

2006 (New HS End-of-course tests implemented in 2009)

Time of test administration

Spring

Major changes in testing system (2002–present)

2005-06: Missouri began testing all the grades from 3–8 and high school. The state also changed assessments, changed the number of achievement levels from five to four, and changed the cut scores defining proficient performance.  
 2008-09: End-of-course exams for course content replaced high school grade span tests for Math grade 10 and Communication Arts grade 11

## 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 MO-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**

Subgroup	Reporting year								Average yearly percentage point gain <sup>1</sup>
	2002	2003	2004	2005	2006	2007	2008	2009	
All tested students									
Advanced					15%	15%	15%	17%	0.4
Proficient-and-above					43%	43%	48%	50%	2.6
Basic-and-above					91%	91%	94%	95%	1.2
White									
Advanced					18%	18%	18%	19%	0.4
Proficient-and-above					49%	49%	55%	56%	2.5
Basic-and-above					94%	94%	96%	96%	0.8
African American									
Advanced					4%	4%	5%	5%	0.5
Proficient-and-above					18%	19%	24%	27%	2.8
Basic-and-above					80%	81%	87%	88%	2.7
Latino									
Advanced					8%	7%	8%	9%	0.2
Proficient-and-above					28%	30%	33%	38%	3.1
Basic-and-above					83%	87%	89%	91%	2.6
Asian									
Advanced					29%	27%	27%	29%	0.0
Proficient-and-above					55%	55%	60%	59%	1.5
Basic-and-above					93%	94%	95%	95%	0.5
Native American <sup>2</sup>									
Advanced					12%	11%	13%	16%	1.2
Proficient-and-above					36%	37%	48%	51%	5.0
Basic-and-above					87%	90%	94%	93%	1.8

Table reads: The percentage of white 8<sup>th</sup> graders who scored at the advanced level on the state reading test increased from 18% in 2006 to 19% in 2009. During this period, the average yearly gain in the percentage advanced in reading for white 8<sup>th</sup> graders was 0.4 percentage points per year.

<sup>1</sup>Averages are subject to rounding error.

<sup>2</sup>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 MO-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 <sup>1</sup>
	2002	2003	2004	2005	2006	2007	2008	2009	
All tested students									
Advanced					15%	15%	15%	17%	0.4
Proficient-and-above					43%	43%	48%	50%	2.6
Basic-and-above					91%	91%	94%	95%	1.2
Low-income students									
Advanced					7%	7%	7%	8%	0.5
Proficient-and-above					27%	27%	33%	35%	2.8
Basic-and-above					85%	86%	91%	91%	2.1
Students with disabilities <sup>3</sup>									
Advanced					2%	3%	3%	5%	0.8
Proficient-and-above					11%	11%	14%	17%	1.9
Basic-and-above					63%	63%	74%	76%	4.4
English language learners <sup>3</sup>									
Advanced					4%	3%	7%	3%	-0.1
Proficient-and-above					13%	12%	25%	18%	1.6
Basic-and-above					68%	74%	83%	80%	3.9
Female									
Advanced					19%	19%	18%	20%	0.3
Proficient-and-above					49%	50%	54%	56%	2.3
Basic-and-above					94%	94%	96%	97%	1.0
Male									
Advanced					11%	11%	12%	13%	0.6
Proficient-and-above					36%	36%	43%	45%	2.9
Basic-and-above					88%	89%	92%	93%	1.4

Table reads: The percentage of low-income 8<sup>th</sup> graders who scored at the advanced level on the state reading test increased from 7% in 2006 to 8% in 2009. During this period, the average yearly gain in the percentage advanced in reading for low-income 8<sup>th</sup> graders was 0.5 percentage points per year.

<sup>1</sup>Averages are subject to rounding error.

<sup>2</sup>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.

<sup>3</sup>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 MO-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**

Subgroup	Reporting year								Average yearly percentage point gain <sup>1</sup>
	2002	2003	2004	2005	2006	2007	2008	2009	
All tested students									
Advanced					13%	14%	14%	15%	0.9
Proficient-and-above					41%	42%	44%	47%	2.1
Basic-and-above					79%	79%	82%	84%	1.6
White									
Advanced					15%	17%	17%	18%	1.0
Proficient-and-above					47%	48%	51%	53%	2.0
Basic-and-above					85%	85%	88%	89%	1.1
African American									
Advanced					2%	3%	3%	4%	0.4
Proficient-and-above					14%	15%	17%	20%	2.1
Basic-and-above					53%	54%	58%	63%	3.5
Latino									
Advanced					6%	7%	7%	8%	0.7
Proficient-and-above					28%	29%	32%	35%	2.4
Basic-and-above					69%	70%	75%	77%	2.8
Asian									
Advanced					29%	33%	33%	33%	1.6
Proficient-and-above					59%	61%	62%	66%	2.3
Basic-and-above					87%	89%	89%	91%	1.3
Native American <sup>2</sup>									
Advanced					7%	13%	8%	12%	1.5
Proficient-and-above					40%	36%	38%	39%	-0.4
Basic-and-above					77%	73%	85%	80%	1.0

Table reads: The percentage of white 8<sup>th</sup> graders who scored at the advanced level on the state math test increased from 15% in 2006 to 18% in 2009. During this period, the average yearly gain in the percentage advanced in math for white 8<sup>th</sup> graders was 1.0 percentage point per year.

<sup>1</sup>Averages are subject to rounding error.

<sup>2</sup>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 MO-10. Percentage of grade 8 students by demographic subgroup scoring at the advanced, proficient-and-above, and basic-and-above levels in mathematics**

	Reporting year								Average yearly percentage point gain <sup>1</sup>
Subgroup	2002	2003	2004	2005	2006	2007	2008	2009	
All tested students									
Advanced					13%	14%	14%	15%	0.9
Proficient-and-above					41%	42%	44%	47%	2.1
Basic-and-above					79%	79%	82%	84%	1.6
Low-income students									
Advanced					5%	6%	6%	7%	0.5
Proficient-and-above					24%	26%	28%	32%	2.4
Basic-and-above					67%	67%	72%	75%	2.8
Students with disabilities <sup>3</sup>									
Advanced					3%	4%	4%	6%	1.0
Proficient-and-above					13%	14%	16%	19%	1.8
Basic-and-above					43%	43%	50%	53%	3.1
English language learners <sup>3</sup>									
Advanced					6%	5%	8%	5%	-0.2
Proficient-and-above					19%	17%	29%	24%	1.4
Basic-and-above					55%	54%	69%	65%	3.4
Female									
Advanced					12%	14%	13%	15%	0.9
Proficient-and-above					40%	41%	44%	47%	2.3
Basic-and-above					80%	80%	83%	85%	1.6
Male									
Advanced					13%	15%	15%	16%	0.9
Proficient-and-above					41%	42%	45%	47%	1.9
Basic-and-above					78%	77%	81%	83%	1.6

Table reads: The percentage of low-income 8<sup>th</sup> graders who scored at the advanced level on the state math test increased from 5% in 2006 to 7% in 2009. During this period, the average yearly gain in the percentage advanced in math for low-income 8<sup>th</sup> graders was 0.5 percentage points per year.

<sup>1</sup>Averages are subject to rounding error.

<sup>2</sup>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.

<sup>3</sup>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 MO-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.

Subgroup	Grade 4					Grade 8					Grade 11				
	Year span	Starting PP	Ending PP	Average annual gain <sup>1</sup>	Gain larger or smaller than comparison group	Year span	Starting PP	Ending PP	Average annual gain <sup>1</sup>	Gain larger or smaller than comparison group	Year span	Starting PP	Ending PP	Average annual gain <sup>1</sup>	Gain larger or smaller than comparison group
All tested students	06-09	45%	47%	0.8		06-09	43%	50%	2.6		06-08	43%	39%	NA	
White	06-09	50%	52%	0.7		06-09	49%	56%	2.5		06-08	47%	44%	NA	
African American	06-09	25%	28%	0.9	L	06-09	18%	27%	2.8	L	06-08	18%	17%	NA	NA
Latino	06-09	32%	34%	0.6	S	06-09	28%	38%	3.1	L	06-08	28%	26%	NA	NA
Asian	06-09	52%	44%	-2.7	S	06-09	55%	59%	1.5	S	06-08	52%	48%	NA	NA
Native American	06-09	39%	59%	6.5 <sup>2</sup>	L	06-09	36%	51%	5.0 <sup>2</sup>	L	06-08	43%	34%	NA	NA
Not low-income	06-09	55%	60%	1.6		06-09	53%	62%	3.2		06-08	49%	46%	NA	
Low-income	06-09	31%	34%	0.8	S	06-09	27%	35%	2.8	S	06-08	26%	24%	NA	NA
Not disabled	06-09	49%	51%	0.6		06-09	48%	56%	2.6		06-08	47%	44%	NA	
Students with disabilities <sup>3</sup>	06-09	22%	27%	1.9	L	06-09	11%	17%	1.9	S	06-08	10%	9%	NA	NA
Not ELLs	06-09	45%	48%	0.8		06-09	43%	61%	6.0		06-08	43%	40%	NA	
English language learners <sup>3</sup>	06-09	20%	25%	1.6	L	06-09	13%	18%	1.6	S	06-08	13%	24%	NA	NA
Female	06-09	51%	53%	0.9		06-09	49%	56%	2.3		06-08	48%	44%	NA	
Male	06-09	39%	41%	0.6	S	06-09	36%	45%	2.9	L	06-08	37%	35%	NA	NA

Table reads: In 2006, 50% of white 4<sup>th</sup> graders and 25% of African American 4<sup>th</sup> graders scored at the proficient level on the state reading test. In 2009, 52% of white 4<sup>th</sup> graders and 28% of African American 4<sup>th</sup> graders scored at the proficient level in reading. Between 2006 and 2009, the percentage proficient improved at an average rate of 0.7 percentage points per year for white students and 0.9 percentage points per year for African American students, indicating a larger rate of gain and a narrowing of the achievement gap for African American 4<sup>th</sup> graders.

<sup>1</sup>Numbers in these columns are subject to rounding error.

<sup>2</sup>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.

<sup>3</sup>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 MO-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.

Subgroup	Grade 4					Grade 8					Grade 10				
	Year span	Starting PP	Ending PP	Average annual gain <sup>1</sup>	Gain larger or smaller than comparison group	Year span	Starting PP	Ending PP	Average annual gain <sup>1</sup>	Gain larger or smaller than comparison group	Year span	Starting PP	Ending PP	Average annual gain <sup>1</sup>	Gain larger or smaller than comparison group
All tested students	06-09	44%	45%	0.3		06-09	41%	47%	2.1		06-08	42%	46%	NA	
White	06-09	50%	51%	0.4		06-09	47%	53%	2.0		06-08	49%	53%	NA	
African American	06-09	22%	21%	-0.3	S	06-09	14%	20%	2.1	L	06-08	14%	18%	NA	NA
Latino	06-09	33%	33%	0.1	S	06-09	28%	35%	2.4	L	06-08	26%	32%	NA	NA
Asian	06-09	59%	62%	0.9	L	06-09	59%	66%	2.3	L	06-08	60%	64%	NA	NA
Native American	06-09	42%	43%	0.4 <sup>2</sup>	E	06-09	40%	39%	-0.4 <sup>2</sup>	S	06-08	34%	38%	NA	NA
Not low-income	06-09	54%	58%	1.3		06-09	51%	59%	2.8		06-08	50%	55%	NA	
Low-income	06-09	31%	31%	0.2	S	06-09	24%	32%	2.4	S	06-08	25%	29%	NA	NA
Not disabled	06-09	48%	48%	0.0		06-09	45%	52%	2.1		06-08	47%	51%	NA	
Students with disabilities <sup>3</sup>	06-09	25%	30%	1.4	L	06-09	13%	19%	1.8	S	06-08	10%	15%	NA	NA
Not ELLS	06-09	45%	46%	0.3		06-09	41%	48%	2.2		06-08	43%	47%	NA	
English language learners <sup>3</sup>	06-09	25%	30%	1.4	L	06-09	19%	24%	1.4	S	06-08	16%	31%	NA	NA
Female	06-09	44%	44%	0.0		06-09	40%	47%	2.3		06-08	42%	46%	NA	
Male	06-09	45%	46%	0.4	L	06-09	41%	47%	1.9	S	06-08	43%	47%	NA	NA

Table reads: In 2006, 50% of white 4<sup>th</sup> graders and 22% of African American 4<sup>th</sup> graders scored at the proficient level on the state math test. In 2009, 51% of white 4<sup>th</sup> graders and 21% of African American 4<sup>th</sup> graders scored at the proficient level in math. Between 2006 and 2009, the percentage proficient improved at an average rate of 0.4 percentage points per year for white students and declined at an average rate of 0.3 percentage points per year for African American students, indicating a widening of the achievement gap for African American 4<sup>th</sup> graders.

<sup>1</sup>Numbers in these columns are subject to rounding error.

<sup>2</sup>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.

<sup>3</sup>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.

## Achievement by Subgroup — Gap Trends (Mean Scale Scores)

**Table MO-13. Achievement gap trends in reading by mean scale scores**

*NOTE:* L = larger gain than comparison group. S = smaller gain than comparison group. E = equal gain to comparison group. MSS = mean scale score. SD = standard deviation. If the average gain for the subgroup of interest, such as African American students, is larger than the average 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.

Subgroup	Statistic	Grade 4					Grade 8					Grade 11				
		Year span	Start year	End year	Avg. gain, MSS <sup>1</sup>	Gain larger or smaller than comp. group	Year span	Start year	End year	Avg. gain, MSS <sup>1</sup>	Gain larger or smaller than comp. group	Year span	Start year	End year	Avg. gain, MSS <sup>1</sup>	Gain larger or smaller than comp. group
All tested students	MSS	06-09	654.6	656.8	0.7		06-09	686.9	692.6	1.9		06-08	716.7	713.6	NA	
	SD	06-09	38.6	33.4			06-09	37.9	33.3			06-08	31.4	35.9		
White	MSS	06-09	658.9	660.9	0.7		06-09	692.5	697.1	1.5		06-08	720.4	717.6	NA	
	SD	06-09	37.0	31.6			06-09	35.9	31.2			06-08	29.8	34.4		
African American	MSS	06-09	637.3	641.1	1.3	L	06-09	664.7	674.2	3.2	L	06-08	697.3	692.6	NA	NA
	SD	06-09	39.4	35.4			06-09	36.1	34.7			06-08	31.8	36.0		
Latino	MSS	06-09	642.9	646.7	1.3	L	06-09	674.1	682.7	2.9	L	06-08	706.0	702.1	NA	NA
	SD	06-09	38.7	33.3			06-09	38.0	33.3			06-08	31.0	35.6		
Asian	MSS	06-09	664.2	666.1	0.6	S	06-09	700.0	701.4	0.5	S	06-08	725.1	721.4	NA	NA
	SD	06-09	39.5	32.9			06-09	43.3	36.3			06-08	34.1	37.9		
Native American	MSS	06-09	650.7	652.3	0.6 <sup>2</sup>	S	06-09	681.2	688.5	2.4 <sup>2</sup>	L	06-08	713.9	708.4	NA	NA
	SD	06-09	40.6	33.3			06-09	39.7	36.8			06-08	33.7	32.8		
Not low-income	MSS	06-09	663.6	666.5	1.0		06-09	695.8	701.5	1.9		06-08	721.3	718.8	NA	
	SD	06-09	35.9	29.8			06-09	35.8	30.2			06-08	29.8	34.8		
Low-income	MSS	06-09	642.8	646.2	1.1	L	06-09	672.9	680.6	2.6	L	06-08	703.6	700.3	NA	NA
	SD	06-09	38.8	33.8			06-09	36.7	33.5			06-08	32.1	35.9		
Not disabled	MSS	06-09	660.7	661.2	0.2		06-09	693.7	697.9	1.4		06-08	721.7	718.6	NA	
	SD	06-09	32.8	29.3			06-09	32.9	28.6			06-08	27.3	32.0		
Students with disabilities <sup>3</sup>	MSS	06-09	622.8	631.4	2.9	L	06-09	646.5	655.5	3.0	L	06-08	679.8	670.5	NA	NA
	SD	06-09	48.8	42.7			06-09	40.1	39.1			06-08	35.1	38.4		
Not ELLs	MSS	06-09	655.1	657.4	0.8		06-09	687.3	693.1	1.9		06-08	717.0	713.5	NA	
	SD	06-09	38.3	33.2			06-09	37.6	33.0			06-08	31.3	36.0		
English language learners <sup>3</sup>	MSS	06-09	631.3	639.0	2.6	L	06-09	656.1	664.5	2.8	L	06-08	688.8	689.6	NA	NA
	SD	06-09	40.9	35.5			06-09	39.8	35.9			06-08	33.0	37.8		
Female	MSS	06-09	660.6	662.3	0.6		06-09	693.4	697.9	1.5		06-08	721.6	718.6	NA	
	SD	06-09	36.5	31.7			06-09	36.4	30.8			06-08	29.0	33.3		
Male	MSS	06-09	648.9	651.5	0.9	L	06-09	680.9	687.5	2.2	L	06-08	711.9	708.6	NA	NA
	SD	06-09	39.4	34.1			06-09	38.0	34.7			06-08	32.8	37.6		

Table reads: In 2006, the mean scale score on the state 4<sup>th</sup> grade reading test was 658.9 for white students and 637.3 for African American students. In 2009, the mean scale score in 4<sup>th</sup> grade reading was 660.9 for white students and 641.1 for African American students. Between 2006 and 2009, the mean scale score improved at an average yearly rate of 0.7 points for white students and 1.3 points for African American students, indicating a narrowing of the achievement gap for African Americans.

Note: The Missouri Assessment is scored on a scale of 450-910 with scores varying across grade level and content area.

<sup>1</sup>Numbers in these columns are subject to rounding error.

<sup>2</sup>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.

<sup>3</sup>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 MO-14. Achievement gap trends in mathematics by mean scale scores**

*NOTE:* L = larger gain than comparison group. S = smaller gain than comparison group. E = equal gain to comparison group. MSS = mean scale score. SD = standard deviation. If the average gain for the subgroup of interest, such as African American students, is larger than the average 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.

Subgroup	Statistic	Grade 4					Grade 8					Grade 10				
		Year span	Start year	End year	Avg. gain MSS <sup>1</sup>	Gain larger or smaller than comp. group	Year span	Start year	End year	Avg. gain MSS <sup>1</sup>	Gain larger or smaller than comp. group	Year span	Start year	End year	Avg. gain MSS <sup>1</sup>	Gain larger or smaller than comp. group
All tested students	MSS	06-09	643.9	644.2	0.1		06-09	697.7	703.6	2.0		06-08	724.5	729.3	NA	
	SD	06-09	37.1	33.9			06-09	40.4	38.6			06-08	51.2	49.6		
White	MSS	06-09	648.8	649.4	0.2		06-09	704.8	709.7	1.6		06-08	732.7	737.7	NA	
	SD	06-09	35.1	31.6			06-09	37.2	35.6			06-08	47.3	45.6		
African American	MSS	06-09	623.3	622.6	-0.2	S	06-09	668.7	677.6	3.0	L	06-08	686.2	691.4	NA	NA
	SD	06-09	37.6	34.6			06-09	39.5	39.5			06-08	50.4	48.4		
Latino	MSS	06-09	634.9	637.0	0.7	L	06-09	686.6	693.4	2.3	L	06-08	707.2	713.3	NA	NA
	SD	06-09	34.4	30.9			06-09	37.1	37.1			06-08	50.6	47.9		
Asian	MSS	06-09	658.4	659.7	0.4	L	06-09	716.8	722.6	1.9	L	06-08	747.8	746.1	NA	NA
	SD	06-09	41.1	35.7			06-09	44.0	41.3			06-08	53.6	54.0		
Native American	MSS	06-09	641.0	640.3	-0.3 <sup>2</sup>	S	06-09	694.6	696.4	0.6 <sup>2</sup>	S	06-08	718.5	720.0	NA	NA
	SD	06-09	34.9	34.2			06-09	40.6	38.5			06-08	49.3	46.1		
Not low-income	MSS	06-09	652.6	654.8	0.7		06-09	707.8	714.5	2.2		06-08	734.1	739.8	NA	
	SD	06-09	35.0	30.9			06-09	37.6	35.5			06-08	48.3	46.7		
Low-income	MSS	06-09	632.4	632.7	0.1	S	06-09	682.0	689.1	2.4	L	06-08	702.8	709.4	NA	NA
	SD	06-09	36.5	33.3			06-09	39.6	37.8			06-08	50.8	48.7		
Not disabled	MSS	06-09	648.6	647.6	-0.4		06-09	704.4	709.2	1.6		06-08	732.9	736.7	NA	
	SD	06-09	33.5	31.8			06-09	35.6	34.5			06-08	45.3	44.5		
Students with disabilities <sup>3</sup>	MSS	06-09	619.3	624.7	1.8	L	06-09	658.4	665.1	2.2	L	06-08	669.5	674.6	NA	NA
	SD	06-09	44.0	38.6			06-09	44.4	43.2			06-08	53.3	50.3		
Not ELLs	MSS	06-09	644.4	644.6	0.1		06-09	698.1	704.1	2.0		06-08	725.0	729.8	NA	
	SD	06-09	36.9	33.7			06-09	40.2	38.4			06-08	50.9	49.3		
English language learners <sup>3</sup>	MSS	06-09	626.6	631.5	1.6	L	06-09	673.6	680.3	2.2	L	06-08	687.4	701.4	NA	NA
	SD	06-09	38.9	35.3			06-09	45.2	41.6			06-08	54.6	53.3		
Female	MSS	06-09	644.0	643.9	0.0		06-09	698.3	704.3	2.0		06-08	724.4	729.8	NA	
	SD	06-09	36.2	32.7			06-09	38.5	36.4			06-08	48.5	46.7		
Male	MSS	06-09	643.9	644.4	0.2	L	06-09	697.5	703.0	1.8	S	06-08	724.8	729.0	NA	NA
	SD	06-09	37.8	35.0			06-09	41.9	40.5			06-08	53.5	52.1		

Table reads: In 2006, the mean scale score on the state 4<sup>th</sup> grade math test was 648.8 for white students and 623.3 for African American students. In 2009, the mean scale score in 4<sup>th</sup> grade math was 649.4 for white students and 622.6 for African American students. Between 2006 and 2009, the mean scale score

improved at an average yearly rate of 0.2 points for white students and declined at an average yearly rate of 0.2 points for African American students, indicating a widening of the achievement gap for African Americans.

Note: The Missouri Assessment is scored on a scale of 450-910 with scores varying across grade level and content area.

<sup>1</sup>Numbers in these columns are subject to rounding error.

<sup>2</sup>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.

<sup>3</sup>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 MO-15. Numbers of test-takers

Subgroup	Subject	Grade 4					Grade 8					Grade 11 Communication Arts/Grade 10 Math				
		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	06-09	65,179	67,278	3.2%	100.0%	06-09	72,483	67,474	-6.9%	100.0%	06-08	60,004	62,885	4.8%	100.0%
	Math	06-09	65,306	67,388	3.2%	100.0%	06-09	72,542	67,501	-6.9%	100.0%	06-08	68,083	69,423	2.0%	100.0%
White	Reading	06-09	49,918	50,754	1.7%	75.4%	06-09	55,668	51,589	-7.3%	76.5%	06-08	48,486	49,255	1.6%	78.3%
	Math	06-09	49,939	50,776	1.7%	75.3%	06-09	55,712	51,576	-7.4%	76.4%	06-08	53,665	53,731	0.1%	77.4%
African American	Reading	06-09	11,588	12,138	4.7%	18.0%	06-09	13,187	11,950	-9.4%	17.7%	06-08	8,842	8,810	-0.4%	14.0%
	Math	06-09	11,593	12,155	4.8%	18.0%	06-09	13,164	11,947	-9.2%	17.7%	06-08	11,193	11,329	1.2%	16.3%
Latino	Reading	06-09	2,162	2,767	28.0%	4.1%	06-09	2,050	2,346	14.4%	3.5%	06-08	1,336	1,420	6.3%	2.3%
	Math	06-09	2,216	2,789	25.9%	4.1%	06-09	2,081	2,365	13.6%	3.5%	06-08	1,734	1,950	12.5%	2.8%
Asian	Reading	06-09	1,097	1,251	14.0%	1.9%	06-09	994	1,242	24.9%	1.8%	06-08	959	1,117	16.5%	1.8%
	Math	06-09	1,139	1,299	14.0%	1.9%	06-09	1,011	1,265	25.1%	1.9%	06-08	1,038	1,223	17.8%	1.8%
Native American	Reading	06-09	275	<b>305</b>	10.9%	0.5%	06-09	371	<b>295</b>	-20.5%	0.4%	06-08	244	<b>274</b>	12.3%	0.4%
	Math	06-09	270	<b>305</b>	13.0%	0.5%	06-09	368	<b>295</b>	-19.8%	0.4%	06-08	307	<b>330</b>	7.5%	0.5%
Low-income	Reading	06-09	28,308	30,882	9.1%	45.9%	06-09	28,327	27,711	-2.2%	41.1%	06-08	15,691	19,089	21.7%	30.4%
	Math	06-09	28,317	30,914	9.2%	45.9%	06-09	28,298	27,721	-2.0%	41.1%	06-08	21,003	23,771	13.2%	34.2%
Students w/ disabilities	Reading	06-09	10,599	10,644	0.4%	15.8%	06-09	10,503	9,207	-12.3%	13.6%	06-08	7,160	7,621	6.4%	12.1%
	Math	06-09	10,609	10,646	0.3%	15.8%	06-09	10,513	9,201	-12.5%	13.6%	06-08	9,079	8,243	-9.2%	11.9%
English language learners	Reading	06-09	1,612	2,191	35.9%	3.3%	06-09	1,141	1,388	21.6%	2.1%	06-08	666	1,406	111.1%	2.2%
	Math	06-09	1,732	2,285	31.9%	3.4%	06-09	1,191	1,444	21.2%	2.1%	06-08	963	1,285	33.4%	1.9%
Female	Reading	06-09	31,905	32,637	2.3%	48.5%	06-09	35,063	32,590	-7.1%	48.3%	06-08	29,970	30,536	1.9%	48.6%
	Math	06-09	31,941	32,670	2.3%	48.5%	06-09	35,089	32,601	-7.1%	48.3%	06-08	33,483	33,900	1.2%	48.8%
Male	Reading	06-09	32,984	34,578	4.8%	51.4%	06-09	37,078	34,832	-6.1%	51.6%	06-08	29,719	30,370	2.2%	48.3%
	Math	06-09	33,038	34,654	4.9%	51.4%	06-09	37,087	34,847	-6.0%	51.6%	06-08	34,240	34,672	1.3%	49.9%

Table reads: In 2006, 49,918 students in the white subgroup took the state 4<sup>th</sup> grade reading test. By 2009, the number of white test-takers had risen to 50,754 students, an increase of 1.7%. In 2009, the white subgroup made up 75.4% of the 67,278 4<sup>th</sup> 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.