Subgroup Achievement and Gap Trends — Colorado

K-12 enrollment — 802,639

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 for State Testing Data. Below the name of the report, click on the link for View State Profiles and Worksheets. Scroll down the page, and click on the Worksheet links for any state.

Subgroup Achievement Trends and Gap Trends — Key Findings

Summary

This year the Center on Education Policy analyzed data on the achievement of different groups of students in two distinct ways. First, we looked at grade 4 test results to determine whether the performance of various groups improved at three achievement levels—basic and above, proficient and above, and advanced. Second, we looked at gaps between these groups at the proficient level across three grades (grade 4, grade 8 in most cases, and a high school grade). These two types of analyses show whether elementary school achievement has generally gone up for different groups of students and whether achievement gaps at different grade levels have narrowed, widened, or stayed the same.

Overall, Colorado showed clear trends upward at the proficient level. Most achievement gaps are narrowing according to the percentage proficient measure; mean scale scores showed less positive results for math achievement gaps.

Subgroup trends by achievement level at grade 4

- Main trend: In reading, all subgroups showed improvements in the percentage of students scoring at the proficient-and-above level, but all subgroups posted declines in the percentage at the advanced achievement level. In math, gains occurred at both achievement levels for all subgroups.

Gap trends at three grade levels

- Contradicting trends using two different measures: In almost all instances, gaps in the percentages of students scoring at the proficient level in reading and math became narrower between the African American, Native American, and Latino subgroups and the white subgroup, and between low-income and non-low-income students, at grades 4 and 8 and at the high school grade tested. Specifically, 11 of the 12 trend lines analyzed in reading showed evidence of gaps narrowing, as did 9 of 12 trend lines in math. The mean scale score measure (the second achievement measure used for this study) showed a result similar to the percentage proficient measure in reading, but in math gaps narrowed 5 out of 12 trend lines.

Data notes

- Limited data: Trends in math are limited to 2005–2008; reading data are available from 2002-2008. For elementary school, data was not available for achievement at the level of basic-and-above.

- Subgroups analyzed: Trends were analyzed for white, African American, Latino, Asian American, and low-income students. Trends for students with disabilities, English language learners, and male and female students have not been summarized because they will be discussed in separate reports.

- Grades analyzed: Analyses of subgroup trends by three achievement levels are limited to one elementary grade because of the massive amounts of data involved and because this is the pilot year of a process that CEP hopes to extend to the middle and high school levels in future years. Analyses of achievement gap trends cover three grade levels: grade 4, grade 8, and the high school grade tested for NCLB.

Data Limitations

Years of comparable percentage proficient data	2001–2008 in reading 2002–2008 in math, grades 5–8 and 10 2005–2008 in math, grades 3–4
Years of comparable mean scale score data	2003-2008 in reading and math 2005-2008 for elementary math 2006-2008 for English language learners and students with disabilities
Disaggregated data for all subgroups and comparison groups	Percentage proficient data not available for low-income students or students who are *not* low-income until 2003 Mean scale score data not available for student subgroups until 2003
Numbers of test-takers by subgroup	Numbers of test-takers not available by subgroup until 2003

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	Colorado Student Assessment Program (CSAP) Colorado Student Assessment Program Alternate (CSAPA)
Grades tested for NCLB accountability	3-10

State labels for achievement levels	CO uses four achievement levels: Unsatisfactory, Partial Proficient, Proficient, and Advanced. For our analyses we treated Partial Proficient + Proficient as Proficient and Advanced as Advanced. No CO achievement level was treated as our Basic.
High school NCLB test also used as an exit exam?	No
First year test used	2001: Reading, grades 3–10 2002: Math, grades 5–10 2005: Math, grades 3–4
Time of test administration	Spring
Major changes in testing system (2002–present)	2004: Changed from reporting AYP by grade span to reporting by specific grades 2004: Introduced math assessments in grades 3–4 but scores not used for AYP until 2005 2004: Developed Title III assessment for limited-English-proficient students 2006: Included grades 5 and 10 in state science assessment
Comments	Because none of Colorado's four achievement levels is equivalent to the NCLB Basic, no Basic and Above analyses could be conducted using CO data.

Achievement by Subgroup — Trends at the Elementary 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 CO-7. Percentages of Grade 4 Students by Racial or Ethnic Subgroup Scoring at the Advanced, Proficient and Above, and Basic and Above Levels in Reading

Subgroup	Reporting Year 2002	2003	2004	2005	2006	2007	2008	Average Yearly Percentage Point Gain[1]
All tested students								
Advanced	6%	7%	5%	7%	5%	6%	4%	-0.3
Proficient and Above	85%	87%	87%	86%	89%	86%	89%	0.7
Basic and Above	NA	NA	NA	NA	NA	NA	NA	NA
White								
Advanced	9%	9%	7%	10%	7%	9%	6%	-0.5
Proficient and Above	92%	92%	94%	93%	95%	93%	95%	0.4
Basic and Above	NA	NA	NA	NA	NA	NA	NA	NA
African American								
Advanced	2%	2%	2%	2%	1%	2%	1%	-0.1
Proficient and Above	74%	77%	81%	78%	81%	76%	82%	1.3
Basic and Above	NA	NA	NA	NA	NA	NA	NA	NA
Latino								
Advanced	2%	2%	1%	2%	1%	2%	1%	-0.2
Proficient and Above	70%	74%	76%	73%	79%	74%	80%	1.6
Basic and Above	NA	NA	NA	NA	NA	NA	NA	NA
Asian								
Advanced	6%	9%	6%	9%	7%	10%	5%	-0.1
Proficient and Above	85%	87%	91%	89%	93%	92%	94%	1.5
Basic and Above	NA	NA	NA	NA	NA	NA	NA	NA
Native American								
Advanced	3%	3%	2%	4%	1%	3%	2%	-0.2
Proficient and Above	80%	80%	80%	80%	86%	78%	83%	0.5
Basic and Above	NA	NA	NA	NA	NA	NA	NA	NA

Table reads: The percentage of white 4th graders who scored at the advanced level on the state reading test decreased from 9% in 2002 to 6% in 2008. During this period, the average yearly loss in the percentage advanced in reading for white 4th graders was 0.5 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 2008 or the most recent year with available data, so changes for this subgroup should be interpreted with caution.

Table CO-8. Percentage of Grade 4 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	
All tested students								
Advanced	6%	7%	5%	7%	5%	6%	4%	-0.3
Proficient and Above	85%	87%	87%	86%	89%	86%	89%	0.7
Basic and Above	NA	NA	NA	NA	NA	NA	NA	NA
Low-income students								
Advanced		2%	1%	2%	1%	2%	1%	-0.2
Proficient and Above		76%	77%	75%	81%	75%	81%	0.9
Basic and Above		NA	NA	NA	NA	NA	NA	NA
Students with disabilities[3]								
Advanced	1%	1%	1%	1%	1%	0%	0%	-0.1
Proficient and Above	49%	51%	56%	53%	58%	57%	58%	0.0
Basic and Above	NA	NA	NA	NA	NA	NA	NA	NA
English language learners[3]								
Advanced	0%	1%	1%	1%	1%	0%	0%	-0.3
Proficient and Above	51%	64%	69%	65%	71%	66%	64%	-3.4
Basic and Above	NA	NA	NA	NA	NA	NA	NA	NA
Female								
Advanced	7%	8%	6%	8%	7%	8%	5%	-0.3
Proficient and Above	88%	89%	90%	88%	92%	89%	91%	0.5
Basic and Above	NA	NA	NA	NA	NA	NA	NA	NA
Male								
Advanced	6%	5%	4%	6%	4%	5%	3%	-0.5
Proficient and Above	83%	84%	86%	84%	88%	84%	88%	0.8
Basic and Above	NA	NA	NA	NA	NA	NA	NA	NA

Table reads: The percentage of low-income 4th graders who scored at the advanced level on the state reading test decreased from 2% in 2003 to 1% in 2008. During this period, the average yearly loss in the percentage advanced in reading for low-income 4th graders was 0.2 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 2008 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 2006-2008 results.

Table CO-9. Percentages of Grade 4 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[1]
	2002	2003	2004	2005	2006	2007	2008	
All tested students								
Advanced				22%	26%	27%	26%	1.4
Proficient and Above				90%	92%	91%	91%	0.3
Basic and Above				NA	NA	NA	NA	NA
White								
Advanced				29%	33%	35%	34%	1.6
Proficient and Above				95%	96%	95%	96%	0.2
Basic and Above				NA	NA	NA	NA	NA
African American								
Advanced				9%	11%	12%	12%	1.1
Proficient and Above				78%	80%	81%	79%	0.5
Basic and Above				NA	NA	NA	NA	NA
Latino								
Advanced				9%	12%	12%	12%	0.9
Proficient and Above				81%	84%	84%	83%	0.7
Basic and Above				NA	NA	NA	NA	NA
Asian								
Advanced				35%	40%	44%	44%	2.9
Proficient and Above				94%	96%	96%	95%	0.4
Basic and Above				NA	NA	NA	NA	NA
Native American								
Advanced				11%	15%	16%	15%	1.3
Proficient and Above				84%	86%	86%	84%	0.0
Basic and Above				NA	NA	NA	NA	NA

Table reads: The percentage of white 4th graders who scored at the advanced level on the state math test increased from 29% in 2005 to 34% in 2008. During this period, the average yearly gain in the percentage advanced in math for white 4th graders was 1.6 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 2008 or the most recent year with available data, so changes for this subgroup should be interpreted with caution.

Table CO-10. Percentage of Grade 4 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	
All tested students								
Advanced				22%	26%	27%	26%	1.4
Proficient and Above				90%	92%	91%	91%	0.3
Basic and Above				NA	NA	NA	NA	NA
Low-income students								
Advanced				9%	12%	13%	12%	1.0
Proficient and Above				81%	84%	85%	83%	0.7
Basic and Above				NA	NA	NA	NA	NA
Students with disabilities[3]								
Advanced				6%	7%	9%	7%	0.0
Proficient and Above				66%	68%	73%	65%	-1.2
Basic and Above				NA	NA	NA	NA	NA
English language learners[3]								
Advanced				8%	9%	7%	5%	-2.1
Proficient and Above				76%	79%	83%	72%	-3.1
Basic and Above				NA	NA	NA	NA	NA
Female								
Advanced				21%	24%	26%	25%	1.4
Proficient and Above				90%	91%	91%	91%	0.2
Basic and Above				NA	NA	NA	NA	NA
Male								
Advanced				23%	27%	29%	27%	1.3
Proficient and Above				89%	92%	91%	91%	0.7
Basic and Above				NA	NA	NA	NA	NA

Table reads: The percentage of low-income 4th graders who scored at the advanced level on the state math test increased from 9% in 2005 to 12% in 2008. During this period, the average yearly gain in the percentage advanced in math for low-income 4th graders was 1.0 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 2008 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 2006-2008 results.

Achievement by Subgroup — Gap Trends (Percentages Proficient)

Table CO-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	02-08	85%	89%	0.7		02-08	85%	88%	0.5		02-08	86%	87%	0.2	
White	02-08	92%	95%	0.4		02-08	92%	93%	0.2		02-08	90%	91%	0.2	
African American	02-08	74%	82%	1.3	L	02-08	78%	80%	0.3	L	02-08	78%	77%	-0.1	S
Latino	02-08	70%	80%	1.6	L	02-08	67%	77%	1.7	L	02-08	68%	77%	1.5	L
Asian	02-08	85%	94%	1.5	L	02-08	87%	92%	0.9	L	02-08	83%	91%	1.4	L
Native American	02-08	80%	83%	0.5	L	02-08	81%	85%	0.6	L	02-08	77%	82%	0.8	L
Not low-income	03-08	92%	95%	0.6		03-08	92%	94%	0.3		03-08	90%	91%	0.1	
Low-income	03-08	76%	81%	0.9	L	03-08	73%	77%	0.9	L	03-08	74%	76%	0.4	L
Not disabled	06-08	94%	93%	-0.5		06-08	91%	92%	0.4		06-08	91%	90%	-0.6	
Students with disabilities[3]	06-08	58%	58%	0.0	L	06-08	51%	51%	0.2	S	06-08	53%	53%	0.1	L
Not ELL	06-08	92%	93%	0.4		06-08	91%	91%	0.0		06-08	90%	89%	-0.5	
English language learners[3]	06-08	71%	64%	-3.4	S	06-08	64%	48%	-8.0	S	06-08	63%	52%	-5.4	S
Female	02-08	88%	91%	0.5		02-08	89%	91%	0.3		02-08	89%	91%	0.3	
Male	02-08	83%	88%	0.8	L	02-08	84%	85%	0.2	S	02-08	82%	83%	0.2	S

Table reads: In 2002, 92% of white 4th graders and 74% of African American 4th graders scored at the proficient level on the state reading test. In 2008, 95% of white 4th graders and 82% of African American 4th graders scored at the proficient level in reading. Between 2002 and 2008, the percentage proficient improved at an average rate of 0.4 percentage point per year for white students and 1.3 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 2008 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 CO-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	05-08	90%	91%	0.3		02-08	70%	76%	1.1		02-08	64%	65%	0.2	
White	05-08	95%	96%	0.2		02-08	80%	86%	0.9		02-08	73%	76%	0.5	
African American	05-08	78%	79%	0.5	L	02-08	46%	57%	1.9	L	02-08	34%	41%	1.2	L
Latino	05-08	81%	83%	0.7	L	02-08	45%	59%	2.3	L	02-08	35%	42%	1.1	L
Asian	05-08	94%	95%	0.4	L	02-08	79%	88%	1.5	L	02-08	71%	77%	1.0	L
Native American	05-08	84%	84%	0.0	S	02-08	56%	65%	1.5	L	02-08	49%	52%	0.5	E
Not low-income	05-08	95%	96%	0.3		03-08	78%	85%	1.5		03-08	68%	73%	1.1	
Low-income	05-08	81%	83%	0.7	L	03-08	42%	59%	3.4	L	03-08	38%	42%	0.8	S
Not disabled	06-08	94%	94%	-0.1		06-08	78%	81%	1.4		06-08	71%	69%	-0.9	
Students with disabilities[3]	06-08	68%	65%	-1.2	S	06-08	30%	33%	1.5	L	06-08	20%	20%	-0.1	L
Not ELL	06-08	93%	93%	0.2		06-08	77%	79%	1.2		06-08	70%	68%	-1.1	
English language learners[3]	06-08	79%	72%	-3.1	S	06-08	49%	34%	-7.2	S	06-08	34%	20%	-7.1	S
Female	05-08	90%	91%	0.2		02-08	71%	76%	0.9		02-08	63%	65%	0.4	
Male	05-08	89%	91%	0.7	L	02-08	70%	77%	1.1	L	02-08	65%	65%	0.0	S

Table reads: In 2005, 95% of white 4th graders and 78% of African American 4th graders scored at the proficient level on the state math test. In 2008, 96% of white 4th graders and 79% of African American 4th graders scored at the proficient level in math. Between 2005 and 2008, the percentage proficient improved at an average rate of 0.2 percentage point per year for white students and 0.5 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 2008 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.

Achievement by Subgroup — Gap Trends (Mean Scale Scores)

Table CO-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.
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.

		Grade 4					Grade 8					Grade 10				
Subgroup	Statistic	Year Span	Starting Year	Ending Year	Average Gain (Mean Scale Score) [1]	Gain Larger or Smaller than Comparison Group	Year Span	Starting Year	Ending Year	Average Gain (Mean Scale Score) [1]	Gain Larger or Smaller than Comparison Group	Year Span	Starting Year	Ending Year	Average Gain (Mean Scale Score) [1]	Gain Larger or Smaller than Comparison Group
All tested students	Mean SS	03-08	587.0	586.0	-0.2		03-08	653.0	651.6	-0.3		03-08	681.0	681.7	0.1	
	SD	03-08	64.4	61.8			03-08	63.7	62.8			03-08	62.0	61.1		
White	Mean SS	03-08	602.8	602.8	0.0		03-08	667.8	667.9	0.0		03-08	692.1	694.8	0.5	
	SD	03-08	57.7	52.0			03-08	56.6	56.4			03-08	57.2	55.8		
African American	Mean SS	03-08	557.0	560.6	0.7	L	03-08	626.8	625.7	-0.2	S	03-08	654.0	655.1	0.2	S
	SD	03-08	64.7	70.9			03-08	60.4	66.0			03-08	64.9	65.1		
Latino	Mean SS	03-08	552.7	556.0	0.7	L	03-08	612.2	618.6	1.3	L	03-08	646.7	651.1	0.9	L
	SD	03-08	65.6	65.1			03-08	66.1	61.5			03-08	65.3	61.3		
Asian	Mean SS	03-08	592.4	599.7	1.5	L	03-08	661.7	664.9	0.6	L	03-08	684.4	694.6	2.1	L
	SD	03-08	61.3	54.9			03-08	60.8	59.4			03-08	57.0	60.3		
Native American	Mean SS	03-08	562.3	565.0	0.5	L	03-08	636.4	634.3	-0.4	S	03-08	665.4	668.3	0.6	L
	SD	03-08	64.8	69.8			03-08	61.5	62.3			03-08	57.7	56.3		
Not Low-income	Mean SS	03-08	602.8	604.0	0.2		03-08	666.9	668.5	0.3		03-08	688.5	692.5	0.8	
	SD	03-08	57.9	51.7			03-08	56.8	55.3			03-08	58.2	56.9		
Low-income	Mean SS	03-08	554.7	558.0	0.7	L	03-08	614.9	619.0	0.8	L	03-08	647.2	650.4	0.6	S
	SD	03-08	65.1	65.6			03-08	65.8	63.5			03-08	68.0	62.2		
Not disabled	Mean SS	06-08	597.0	593.7	-1.7		06-08	657.4	659.2	0.9		06-08	689.9	687.7	-1.1	
	SD	06-08	53.2	53.0			06-08	57.7	56.2			06-08	56.8	56.6		
Students with disabilities [3]	Mean SS	06-08	520.7	518.3	-1.2	L	06-08	569.5	575.4	2.9	L	06-08	605.9	609.4	1.8	L
	SD	06-08	86.3	86.5			06-08	80.8	73.9			06-08	73.4	66.7		
Not ELLs	Mean SS	06-08	597.1	594.6	-1.2		06-08	656.1	657.4	0.7		06-08	688.5	686.0	-1.3	
	SD	06-08	56.8	55.6			06-08	60.5	58.6			06-08	58.9	58.3		
English language learners [3]	Mean SS	06-08	532.1	524.2	-3.9	S	06-08	577.3	568.8	-4.3	S	06-08	612.0	606.1	-3.0	S
	SD	06-08	61.2	68.6			06-08	60.9	61.7			06-08	54.1	60.5		
Female	Mean SS	03-08	594.0	591.8	-0.4		03-08	662.0	660.5	-0.3		03-08	692.0	693.4	0.3	
	SD	03-08	61.9	58.1			03-08	59.2	59.6			03-08	53.4	55.7		

		Grade 4					Grade 8					Grade 10				
Subgroup	Statistic	Year Span	Starting Year	Ending Year	Average Gain (Mean Scale Score) [1]	Gain Larger or Smaller than Comparison Group	Year Span	Starting Year	Ending Year	Average Gain (Mean Scale Score) [1]	Gain Larger or Smaller than Comparison Group	Year Span	Starting Year	Ending Year	Average Gain (Mean Scale Score) [1]	Gain Larger or Smaller than Comparison Group
Male	Mean SS	03-08	580.0	580.4	0.1	L	03-08	644.0	643.1	-0.2	L	03-08	671.0	670.3	-0.2	S
	SD	03-08	66.3	64.6			03-08	66.6	64.5			03-08	67.8	64.0		

Table reads: In 2003, the mean scale score on the state 4th grade reading test was 602.8 for white students and 557.0 for African American students. In 2008, the mean scale score in 4th grade reading was 602.8 for white students and 560.6 for African American students. Between 2003 and 2008, the mean scale score remained the same for white students and improved at an average yearly rate of 0.7 points for African American students, indicating a narrowing of the achievement gap for African Americans.

Note: The Colorado Student Assessment Program (CSAP) is scored on a scale of 150-999; grade 4 ranges from 180-940, grade 8 from 330-990, and grade 10 from 370-999.

[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 2008 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 CO-14. Subgroup Achievement 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.
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.

		Grade 4					Grade 8					Grade 10				
Subgroup	Statistic	Year Span	Starting Year	Ending Year	Average Gain (Mean Scale Score)[1]	Gain Larger or Smaller than Comparison Group	Year Span	Starting Year	Ending Year	Average Gain (Mean Scale Score)[1]	Gain Larger or Smaller than Comparison Group	Year Span	Starting Year	Ending Year	Average Gain (Mean Scale Score)[1]	Gain Larger or Smaller than Comparison Group
All tested students	Mean SS	05-08	482.0	488.7	2.2		03-08	550.0	568.0	3.6		03-08	582.0	585.8	0.8	
	SD	05-08	74.5	78.7			03-08	73.8	74.1			03-08	72.2	74.0		
White	Mean SS	05-08	500.5	508.8	2.8		03-08	567.1	586.9	4.0		03-08	596.7	604.1	1.47	
	SD	05-08	68.3	72.2			03-08	66.9	67.2			03-08	66.1	66.9		
African American	Mean SS	05-08	441.6	447.8	2.1	S	03-08	506.2	527.4	4.2	L	03-08	530.1	539.9	2.0	L
	SD	05-08	76.5	81.5			03-08	70.9	76.9			03-08	71.8	76.2		
Latino	Mean SS	05-08	445.9	453.2	2.5	S	03-08	505.9	530.3	4.9	L	03-08	537.2	544.8	1.51	L
	SD	05-08	70.9	73.9			03-08	72.9	69.8			03-08	70.5	70.2		
Asian	Mean SS	05-08	507.2	521.3	4.7	L	03-08	577.8	601.4	4.7	L	03-08	600.6	614.0	2.7	L
	SD	05-08	72.6	79.9			03-08	65.9	73.0			03-08	70.7	71.7		
Native American	Mean SS	05-08	455.9	459.5	1.2	S	03-08	526.8	541.0	2.8	S	03-08	554.1	560.8	1.4	S
	SD	05-08	72.0	75.5			03-08	72.1	71.6			03-08	68.8	72.6		
Not Low-income	Mean SS	05-08	502.5	511.2	2.9		03-08	566.3	587.5	4.2		03-08	591.2	600.2	1.8	
	SD	05-08	68.4	73.0			03-08	67.0	67.3			03-08	68.5	69.2		
Low-income	Mean SS	05-08	446.8	453.8	2.3	S	03-08	506.7	530.5	4.8	L	03-08	538.8	544.3	1.1	S
	SD	05-08	71.3	74.4			03-08	73.9	72.0			03-08	73.9	71.7		
Not disabled	Mean SS	06-08	469.8	497.0	13.6		06-08	570.9	576.5	2.8		06-08	593.9	593.2	-0.3	
	SD	06-08	71.2	73.9			06-08	68.5	67.6			06-08	67.6	68.8		
Students with disabilities[3]	Mean SS	06-08	420.0	416.1	-1.9	S	06-08	473.3	482.4	4.6	L	06-08	493.9	497.2	1.7	L
	SD	06-08	79.3	81.4			06-08	83.5	81.5			06-08	78.6	76.2		
Not ELLs	Mean SS	06-08	497.4	498.1	0.3		06-08	567.7	573.4	2.9		06-08	591.2	590.4	-0.4	
	SD	06-08	72.8	75.3			06-08	73.7	71.3			06-08	71.0	71.7		
English language learners[3]	Mean SS	06-08	430.8	422.9	-4.0	S	06-08	495.7	491.2	-2.2	S	06-08	509.1	505.5	-1.8	S
	SD	06-08	66.6	70.0			06-08	65.5	69.4			06-08	67.5	68.3		
Female	Mean SS	05-08	480.0	486.9	2.3		03-08	553.0	566.4	2.7		03-08	582.0	585.5	0.7	

		Grade 4					Grade 8					Grade 10				
Subgroup	Statistic	Year Span	Starting Year	Ending Year	Average Gain (Mean Scale Score) [1]	Gain Larger or Smaller than Comparison Group	Year Span	Starting Year	Ending Year	Average Gain (Mean Scale Score) [1]	Gain Larger or Smaller than Comparison Group	Year Span	Starting Year	Ending Year	Average Gain (Mean Scale Score) [1]	Gain Larger or Smaller than Comparison Group
	SD	05-08	73.2	78.0			03-08	68.3	70.8			03-08	67.6	69.8		
Male	Mean SS	05-08	483.0	490.4	2.5	L	03-08	548.0	569.6	4.3	L	03-08	583.0	586.1	0.6	S
	SD	05-08	75.7	79.3			03-08	78.8	77.0			03-08	76.5	77.9		

Table reads: In 2005, the mean scale score on the state 4th grade math test was 500.5 for white students and 441.6 for African American students. In 2008, the mean scale score in 4th grade math was 508.8 for white students and 447.8 for African American students. Between 2005 and 2008, the mean scale score improved at an average yearly rate of 2.8 points for white students and 2.1 points for African American students, indicating a widening of the achievement gap for African Americans.

Note: The Colorado Student Assessment Program (CSAP) is scored on a scale of 155-950; grade 4 ranges from 180-780, grade 8 from 310-890, and grade 10 from 370-950.

[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 2008 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 CO-15. 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	03-08	55,695	58,003	4.1%	100.0%	03-08	56,573	56,595	0.0%	100.0%	03-08	51,955	55,283	6.4%	100.0%
	Math	05-08	55,399	58,216	5.1%	100.0%	03-08	56,529	56,718	0.3%	100.0%	03-08	52,263	55,568	6.3%	100.0%
White	Reading	03-08	35,850	34,724	-3.1%	59.9%	03-08	38,297	35,445	-7.4%	62.6%	03-08	37,154	36,310	-2.3%	65.7%
	Math	05-08	34,351	34,754	1.2%	59.7%	03-08	38,286	35,484	-7.3%	62.6%	03-08	37,362	36,449	-2.4%	65.6%
African American	Reading	03-08	3,476	3,536	1.7%	6.1%	03-08	3,202	3,456	7.9%	6.1%	03-08	2,695	3,369	25.0%	6.1%
	Math	05-08	3,352	3,537	5.5%	6.1%	03-08	3,190	3,471	8.8%	6.1%	03-08	2,717	3,386	24.6%	6.1%
Latino	Reading	03-08	14,085	16,949	20.3%	29.2%	03-08	12,697	15,076	18.7%	26.6%	03-08	9,962	13,142	31.9%	23.8%
	Math	05-08	15,173	17,118	12.8%	29.4%	03-08	12,682	15,138	19.4%	26.7%	03-08	10,030	13,269	32.3%	23.9%
Asian	Reading	03-08	1,585	2,122	33.9%	3.7%	03-08	1,680	1,878	11.8%	3.3%	03-08	1,573	1,823	15.9%	3.3%
	Math	05-08	1,895	2,136	12.7%	3.7%	03-08	1,680	1,885	12.2%	3.3%	03-08	1,578	1,824	15.6%	3.3%
Native American	Reading	03-08	695	672	-3.3%	1.2%	03-08	695	734	5.6%	1.3%	03-08	568	630	10.9%	1.1%
	Math	05-08	628	671	6.8%	1.2%	03-08	685	737	7.6%	1.3%	03-08	574	639	11.3%	1.1%
Low-income	Reading	03-08	18,814	22,654	20.4%	39.1%	03-08	15,637	19,263	23.2%	34.0%	03-08	9,268	14,136	52.5%	25.6%
	Math	05-08	20,667	22,816	10.4%	39.2%	03-08	15,630	19,348	23.8%	34.1%	03-08	9,327	14,251	52.8%	25.6%
Students w/ disabilities	Reading	06-08	5,847	5,951	1.8%	10.3%	06-08	5,323	5,081	-4.5%	9.0%	06-08	4,470	4,278	-4.3%	7.7%
	Math	06-08	5,873	5,983	1.9%	10.3%	06-08	5,315	5,104	-4.0%	9.0%	06-08	4,472	4,295	-4.0%	7.7%
English language learners	Reading	06-08	8,027	7,083	-11.8%	12.2%	06-08	6,103	3,697	-39.4%	6.5%	06-08	4,547	2,954	-35.0%	5.3%
	Math	06-08	8,497	7,291	-14.2%	12.5%	06-08	6,105	3,738	-38.8%	6.6%	06-08	4,539	2,973	-34.5%	5.4%
Female	Reading	03-08	27,150	28,549	5.2%	49.2%	03-08	27,679	27,682	0.0%	48.9%	03-08	25,575	27,337	6.9%	49.4%
	Math	05-08	26,934	28,634	6.3%	49.2%	03-08	27,669	27,722	0.2%	48.9%	03-08	25,694	27,457	6.9%	49.4%
Male	Reading	03-08	28,540	29,450	3.2%	50.8%	03-08	28,890	28,904	0.0%	51.1%	03-08	26,378	27,930	5.9%	50.5%
	Math	05-08	28,465	29,574	3.9%	50.8%	03-08	28,852	28,990	0.5%	51.1%	03-08	26,564	28,106	5.8%	50.6%

Table reads: In 2003, 35,850 students in the white subgroup took the state 4th grade reading test. By 2008, the number of white test-takers had fallen to 34,724 students, a decrease of 3.1%. In 2008, the white subgroup made up 59.9% of the 58,003 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 2008 or the most recent year with available data.

Key Terms

Percentage proficient (and above) — The percentage of students in a group who score at and 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 and 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 points 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 ends 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 above 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.