Subgroup Achievement and Gap Trends — Virginia

K-12 enrollment — 1,231,987

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.

Virginia test scores show an upward trend, and there is a positive picture of progress on achievement gaps.

Subgroup trends by achievement level at grade 4

- Main trend: All subgroups made gains in reading and math at two achievement levels—proficient-and-above and advanced. Specifically, 18 of the 18 trend lines analyzed across the two achievement levels in reading and math showed gains. For nearly all subgroups, gains were largest at the advanced level.

Gap trends at three grade levels

- Main trend: In all instances, gaps in the percentages of students scoring at the proficient level narrowed between African American, Latino, or Native American students and white students, and between low-income and all tested students, at grades 4 and 8 and at the high school grade tested. Specifically, 12 of the 12 trend lines analyzed in reading showed evidence of gaps narrowing, as did 12 of 12 trend lines in math.

Data notes

- Limited data: Virginia has made a number of changes to its testing program in recent years. As a result, comparable test data are available for only three years (2006-2008), the minimum span necessary to identify a trend. Also, Virginia combines two of its four achievement levels, so trends at the basic level could not be determined. Mean score data was not available.

- Subgroups analyzed: Trends were analyzed for white, African American, Latino, Native American, 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 two 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	2006 through 2008
Years of comparable mean scale score data	No mean scale scores or standard deviations available
Disaggregated data for all subgroups and comparison groups	Percentage proficient data available 2006 through 2008 Percentage proficient data not available until 2008 for comparison groups of students who are *not* low-income, disabled, or English language learners, so the subgroups of low-income students, students with disabilities, and ELLs are compared with all students in the state Mean scale score data not available for student subgroups
Numbers of test-takers by subgroup	Not available, so it cannot be determined which subgroups are small
Other data limitations	No disaggregated achievement level data available for mathematics high school end-of course tests

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	Standards of Learning (SOL) Assessments Virginia Alternate Assessment Program
Grades tested for NCLB accountability	3–8; grades vary for high school end-of-course exams
State labels for achievement levels	VA uses four achievement levels: Fail, Fail-Basic, Proficient, and Advanced. For our analyses we treated Proficient as Proficient and

	Advanced as Advanced. Virginia combines Fail and Fail-Basic into one category, “Fail,” for its state report cards; therefore, no VA achievement level was treated as our Basic.
High school NCLB test also used as an exit exam?	Yes
First year test used	2006
Time of test administration	Fall, spring, and summer
Major changes in testing system (2002–present)	2005–06: Grades 4, 6, and 7 were tested in reading and math and included in AYP determinations for first time 2005–06: Tests for grades 3, 5, and 8 and high school end-of-course tests were revised; data not comparable to previous years

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 VA-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							Average Yearly Percentage Point Gain[1]
	2002	2003	2004	2005	2006	2007	2008	
All tested students								
Advanced					42%	47%	47%	2.5
Proficient and Above					86%	87%	88%	1.0
Basic and Above					NA	NA	NA	NA
White								
Advanced					50%	55%	55%	2.5
Proficient and Above					90%	91%	92%	1.0
Basic and Above					NA	NA	NA	NA
African American								
Advanced					27%	33%	31%	2.0
Proficient and Above					78%	80%	81%	1.5
Basic and Above					NA	NA	NA	NA
Latino								
Advanced					24%	31%	37%	6.5
Proficient and Above					80%	77%	84%	2.0
Basic and Above					NA	NA	NA	NA
Asian								
Advanced					48%	56%	60%	6.0
Proficient and Above					92%	92%	94%	1.0
Basic and Above					NA	NA	NA	NA
Native American								
Advanced					41%	52%	42%	0.5
Proficient and Above					86%	93%	89%	1.5
Basic and Above					NA	NA	NA	NA

Table reads: The percentage of white 4th graders who scored at the advanced level on the state reading test increased from 50% in 2006 to 55% in 2008. During this period, the average yearly gain in the percentage advanced in reading for white 4th graders was 2.5 percentage points per year.

[1]Averages are subject to rounding error.

Table VA-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 2002	2003	2004	2005	2006	2007	2008	Average Yearly Percentage Point Gain[1]
All tested students								
Advanced					42%	47%	47%	2.5
Proficient and Above					86%	87%	88%	1.0
Basic and Above					NA	NA	NA	NA
Low-income students								
Advanced					24%	30%	32%	4.0
Proficient and Above					77%	78%	81%	2.0
Basic and Above					NA	NA	NA	NA
Students with disabilities[2]								
Advanced					26%	29%	33%	3.5
Proficient and Above					72%	69%	73%	0.5
Basic and Above					NA	NA	NA	NA
English language learners[2]								
Advanced					20%	26%	37%	8.5
Proficient and Above					79%	74%	84%	2.5
Basic and Above					NA	NA	NA	NA
Female								
Advanced					43%	49%	50%	3.5
Proficient and Above					88%	89%	90%	1.0
Basic and Above					NA	NA	NA	NA
Male								
Advanced					40%	45%	45%	2.5
Proficient and Above					85%	86%	87%	1.0
Basic and Above					NA	NA	NA	NA

Table reads: The percentage of low-income 4th graders who scored at the advanced level on the state reading test increased from 24% in 2006 to 32% in 2008. During this period, the average yearly gain in the percentage advanced in reading for low-income 4th graders was 4.0 percentage points per year.

[1]Averages are subject to rounding error.

[2]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 VA-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					34%	37%	42%	4.0
Proficient and Above					77%	81%	84%	3.5
Basic and Above					NA	NA	NA	NA
White								
Advanced					41%	44%	49%	4.0
Proficient and Above					84%	86%	89%	2.5
Basic and Above					NA	NA	NA	NA
African American								
Advanced					18%	22%	26%	4.0
Proficient and Above					64%	69%	74%	5.0
Basic and Above					NA	NA	NA	NA
Latino								
Advanced					20%	23%	29%	4.5
Proficient and Above					65%	70%	76%	5.5
Basic and Above					NA	NA	NA	NA
Asian								
Advanced					49%	52%	62%	6.5
Proficient and Above					87%	91%	93%	3.0
Basic and Above					NA	NA	NA	NA
Native American								
Advanced					33%	39%	40%	3.5
Proficient and Above					78%	85%	85%	3.5
Basic and Above					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 41% in 2006 to 49% in 2008. During this period, the average yearly gain in the percentage advanced in math for white 4th graders was 4.0 percentage points per year.

[1]Averages are subject to rounding error.

Table VA-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					34%	37%	42%	4.0
Proficient and Above					77%	81%	84%	3.5
Basic and Above					NA	NA	NA	NA
Low-income students								
Advanced					18%	22%	26%	4.0
Proficient and Above					63%	69%	74%	5.5
Basic and Above					NA	NA	NA	NA
Students with disabilities[2]								
Advanced					20%	23%	27%	3.5
Proficient and Above					59%	62%	69%	5.0
Basic and Above					NA	NA	NA	NA
English language learners[2]								
Advanced					20%	23%	31%	5.5
Proficient and Above					63%	69%	77%	7.0
Basic and Above					NA	NA	NA	NA
Female								
Advanced					32%	36%	40%	4.0
Proficient and Above					77%	81%	84%	3.5
Basic and Above					NA	NA	NA	NA
Male								
Advanced					35%	39%	44%	4.5
Proficient and Above					78%	81%	84%	3.0
Basic and Above					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 18% in 2006 to 26% in 2008. During this period, the average yearly gain in the percentage advanced in math for low-income 4th graders was 4.0 percentage points per year.

[1]Averages are subject to rounding error.

[2]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 VA-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					HS EOC				
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	06-08	86%	88%	1.0		06-08	78%	83%	2.5		06-08	90%	94%	2.0	
White	06-08	90%	92%	1.0		06-08	85%	89%	2.0		06-08	94%	97%	1.5	
African American	06-08	78%	81%	1.5	L	06-08	64%	71%	3.5	L	06-08	83%	89%	3.0	L
Latino	06-08	80%	84%	2.0	L	06-08	63%	75%	6.0	L	06-08	83%	91%	4.0	L
Asian	06-08	92%	94%	1.0	E	06-08	85%	92%	3.5	L	06-08	91%	97%	3.0	L
Native American	06-08	86%	89%	1.5	L	06-08	81%	89%	4.0	L	06-08	88%	97%	4.5	L
All tested students	06-08	86%	88%	1.0		06-08	78%	83%	2.5		06-08	90%	94%	2.0	
Low-income	06-08	77%	81%	2.0	L	06-08	63%	71%	4.0	L	06-08	82%	89%	3.5	L
All tested students	06-08	86%	88%	1.0		06-08	78%	83%	2.5		06-08	90%	94%	2.0	
Students with disabilities[3]	06-08	72%	73%	0.5	S	06-08	50%	57%	3.5	L	06-08	69%	76%	3.5	L
All tested students	06-08	86%	88%	1.0		06-08	78%	83%	2.5		06-08	90%	94%	2.0	
English language learners[3]	06-08	79%	84%	2.5	L	06-08	54%	69%	7.5	L	06-08	73%	87%	7.0	L
Female	06-08	88%	90%	1.0		06-08	81%	85%	2.0		06-08	92%	95%	1.5	
Male	06-08	85%	87%	1.0	E	06-08	75%	82%	3.5	L	06-08	89%	94%	2.5	L

Table reads: In 2006, 90% of white 4th graders and 78% of African American 4th graders scored at the proficient level on the state reading test. In 2008, 92% of

white 4th graders and 81% of African American 4th graders scored at the proficient level in reading. Between 2006 and 2008, the percentage proficient improved at an average rate of 1.0 percentage point per year for white students and 1.5 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.

Table VA-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					HS EOC				
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	06-08	77%	84%	3.5		06-08	76%	83%	3.5		06-08	83%	88%	2.7	
White	06-08	84%	89%	2.5		06-08	83%	89%	3.0		06-08	87%	92%	2.5	
African American	06-08	64%	74%	5.0	L	06-08	63%	72%	4.5	L	06-08	73%	80%	3.3	L
Latino	06-08	65%	76%	5.5	L	06-08	64%	74%	5.0	L	06-08	78%	85%	3.4	L
Asian	06-08	87%	93%	3.0	L	06-08	89%	94%	2.5	S	06-08	91%	95%	2.0	S
Native American	06-08	78%	85%	3.5	L	06-08	76%	88%	6.0	L	06-08	78%	87%	4.2	L
All tested students	06-08	77%	84%	3.5		06-08	76%	83%	3.5		06-08	83%	88%	2.7	
Low-income	06-08	63%	74%	5.5	L	06-08	62%	72%	5.0	L	06-08	76%	81%	2.8	L
All tested students	06-08	77%	84%	3.5		06-08	76%	83%	3.5		06-08	83%	88%	2.7	
Students with disabilities[3]	06-08	59%	69%	5.0	L	06-08	45%	58%	6.5	L	06-08	61%	69%	3.7	L
All tested students	06-08	77%	84%	3.5		06-08	76%	83%	3.5		06-08	83%	88%	2.7	
English language learners[3]	06-08	63%	77%	7.0	L	06-08	58%	72%	7.0	L	06-08	78%	86%	3.9	L
Female	06-08	77%	84%	3.5		06-08	79%	85%	3.0		06-08	83%	89%	2.7	
Male	06-08	78%	84%	3.0	S	06-08	74%	81%	3.5	L	06-08	82%	87%	2.7	E

Table reads: In 2006, 84% of white 4th graders and 64% of African American 4th graders scored at the proficient level on the state math test. In 2008, 89% of white 4th graders and 74% of African American 4th graders scored at the proficient level in math. Between 2006 and 2008, the percentage proficient improved at an average rate of 2.5 percentage point per year for white students and 5.0 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.

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.