General Achievement Trends — Maryland

K-12 enrollment — 845,700

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 No Child Left Behind. In the Document Library, look for the most recent report on student achievement since 2002. 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.

Overall Achievement — Key Findings

General results

The tables in this profile present state test results in reading and math at two achievement levels (proficient and advanced) and at one grade each at the elementary, middle, and high school levels. (None of Maryland's three achievement levels is equivalent to the basic level, so trends at this level could not be determined.) These data are more complete than the percentage of students scoring proficient that is the main indicator used to determine adequate yearly progress under the No Child Left Behind Act.

Maryland has made a number of changes to its testing program in recent years. In 2008, Maryland changed its policy for reporting scores from high school exams. As a result, Maryland did not have three or more years of comparable data through 2007-08 for high school reading or math, so trends could not be determined. Trend lines for the elementary grade analyzed begin in 2004, and trend lines for middle school begin in 2003.

In general, Maryland students made gains at the **proficient** and **advanced** achievement levels.

Specific results

- In reading and math, the percentage of students scoring at the **proficient** level and above increased at a moderate-to-large rate at the elementary and middle grades analyzed.

- In both reading and math, the percentage of students reaching the **advanced** level rose at a moderate-to-large rate at all grade levels analyzed (high school math and reading lacked sufficient data).

Data Limitations

Years of comparable percentage proficient data	2003 through 2008 for grades 3, 5, and 8 2004 through 2008 for grades 4, 6, and 7 2005 through 2007 for high school English 2 2006 through 2007 for high school math (algebra/data analysis exam replaced geometry exam in 2006) High school assessments began a new trend line in 2008, when Maryland started reporting the highest scores of students who took high school tests multiple times, rather than scores from the first time students took the test.
Years of data needed to compute effect sizes	Cannot compute effect sizes; no mean scale scores or standard deviations available
Numbers of test-takers by subgroup	Not available in 2008

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	Maryland School Assessments (MSA) (grades 3–8 in reading and math) Maryland High School Assessments (HSA); HSA exams in English 2 and algebra/data analysis used for NCLB Alternate Maryland School Assessment (Alt-MSA) (alternate assessment for students with disabilities in all tested grades)
Grades tested for NCLB accountability	3–8 The HSAs are not grade-specific, but are end-of-course exams that students take as they complete the appropriate courses. Most students take the English 2 HSA in 10th grade.
State labels for achievement levels	MD uses three achievement levels: Basic, Proficient, and Advanced. For our analyses we treated Proficient as Proficient and Advanced as Advanced. No MD achievement level was treated

	as our Basic.
High school NCLB test also used as an exit exam?	Yes
First year test used	2003: MSA grades 3, 5, 8 2005: MSA grades 4, 6, 7 2005: English 2 HSA 2006: Algebra/data analysis HSA (The trend lines for the High School Assessment were broken in 2008, when Maryland began reporting the highest scores of students who took the test multiple times instead of scores from the first time students took the test.)
Time of test administration	MSA: Spring Alt-MSA: Administered throughout the year HSA: Four times per year: October (began 07/08), January, May, Summer
Major changes in testing system (2002–present)	2004 through 2006: Made several changes in policies for determining AYP 2005: English 2 HSA exam replaced reading 10 exam 2006: Algebra/data analysis HSA replaced geometry exam for AYP reporting 2008: In 2008, Maryland changed its policy for reporting scores from high school exams. Instead of reporting only those scores from the first time students took the test, the state began reporting the highest scores of students who took the high school exams multiple times. June 2008: Maryland implemented modified high school assessments for students with disabilities, which will be administered for the first time in 2009.

Overall Achievement — Percentages Proficient

Figure MD-1. Percentage of Students Scoring at the Proficient Level and Above in Reading

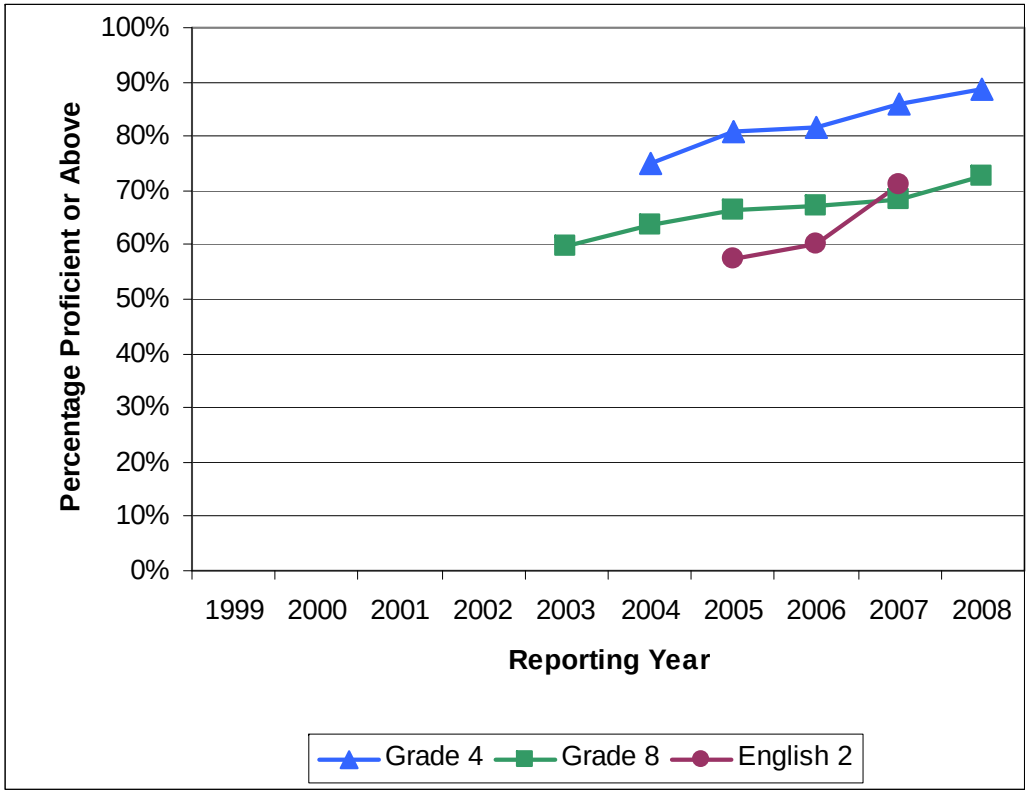


Table MD-1. Percentage of Students Scoring at the Proficient Level and Above in Reading

Grade Level	Reporting Year										Pre-NCLB Average Yearly Percentage Point Gain 1999-2002[1]	Post-NCLB Average Yearly Percentage Point Gain 2002-2008[1]
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008		
Grade 3					58%	71%	76%	78%	81%	83%	NA	5.0
Grade 4						**75%**	**81%**	**82%**	**86%**	**89%**	**NA**	**3.4**
Grade 5					66%	68%	74%	77%	77%	87%	NA	4.2
Grade 6						68%	70%	72%	77%	82%	NA	3.4
Grade 7						67%	67%	71%	70%	81%	NA	3.6
Grade 8					**60%**	**64%**	**66%**	**67%**	**68%**	**73%**	**NA**	**2.6**
English 2							**57%**	**60%**	**71%**		**NA**	**NA**

Table reads: The percentage of 3rd graders who scored at the proficient level and above on the state reading test increased from 58% in 2003 to 83% in 2008. The average yearly gain in the percentage proficient in grade 3 reading was 5.0 percentage points per year after NCLB was enacted.

[1]Averages are subject to rounding error.

Figure MD-2. Percentage of Students Scoring at the Proficient Level and Above in Mathematics

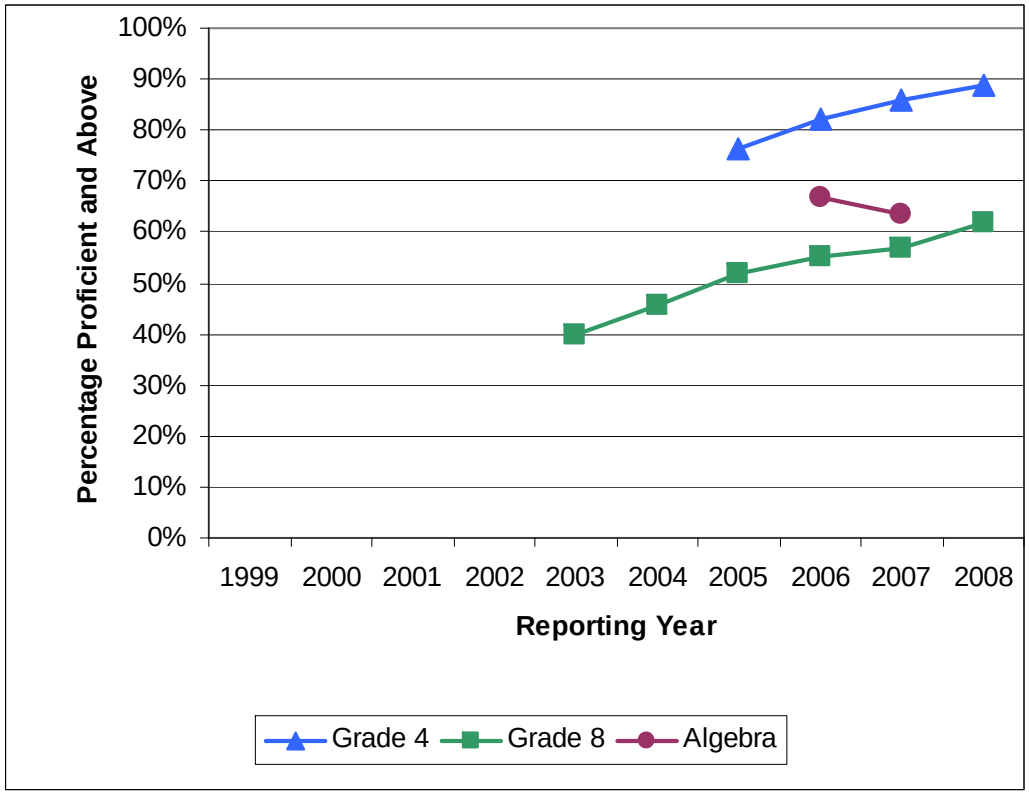


Table MD-2. Percentage of Students Scoring at the Proficient Level and Above in Mathematics

Grade Level	Reporting Year										Pre-NCLB Average Yearly Percentage Point Gain 1999-2002[1]	Post-NCLB Average Yearly Percentage Point Gain 2002-2008[1]
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008		
Grade 3					65%	72%	77%	79%	79%	83%	NA	3.5
Grade 4						**70%**	**77%**	**82%**	**86%**	**89%**	**NA**	**4.8**
Grade 5					55%	63%	69%	73%	78%	81%	NA	5.1
Grade 6						50%	60%	66%	72%	76%	NA	6.4
Grade 7						50%	55%	60%	61%	68%	NA	4.6
Grade 8					**40%**	**46%**	**52%**	**55%**	**57%**	**62%**	**NA**	**4.4**
Algebra								**67%**	**64%**		**NA**	**NA**

Table reads: The percentage of 3rd graders who scored at the proficient level and above on the state math test increased from 65% in 2003 to 83% in 2008. The average yearly gain in the percentage proficient in grade 3 math was 3.5 percentage points per year after NCLB was enacted.

[1]Averages are subject to rounding error.

Overall Achievement — Percentages Advanced, Proficient, and Basic

How to read figures 3 and 4 and tables 3 and 4

The stacked bars in figures 3 and 4 show the percentages of students scoring at the proficient and advanced levels on the state tests used for NCLB accountability. Because none of Maryland's three achievement levels is equivalent to the NCLB basic achievement level, no analyses could be conducted of performance at the basic level and above.

The following information may be helpful in interpreting the figures:

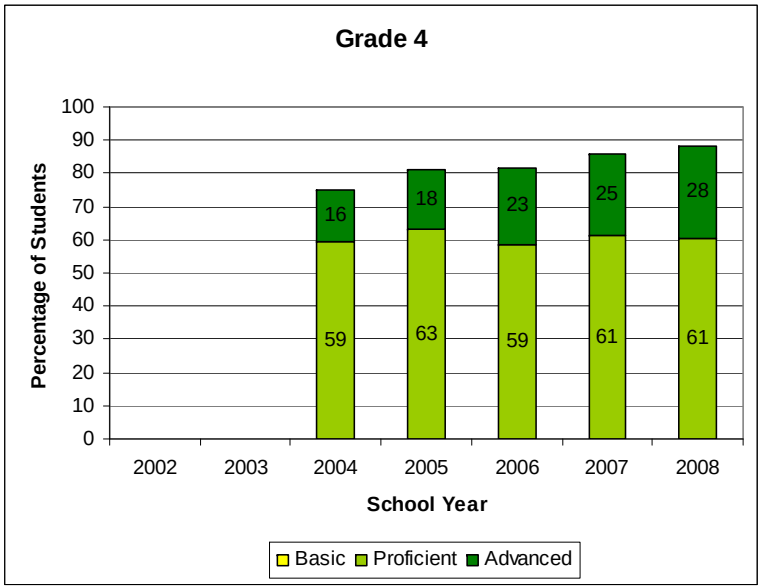
- The percentage proficient and above—the benchmark used to determine adequate yearly progress under NCLB—is the sum of the middle and top segments of the bars (percentage proficient plus percentage advanced). The resulting sum corresponds with the percentage proficient and above shown in tables 3 and 4. In a few instances, however, the sums in the figures may differ from those in the tables by a percentage point due to rounding.

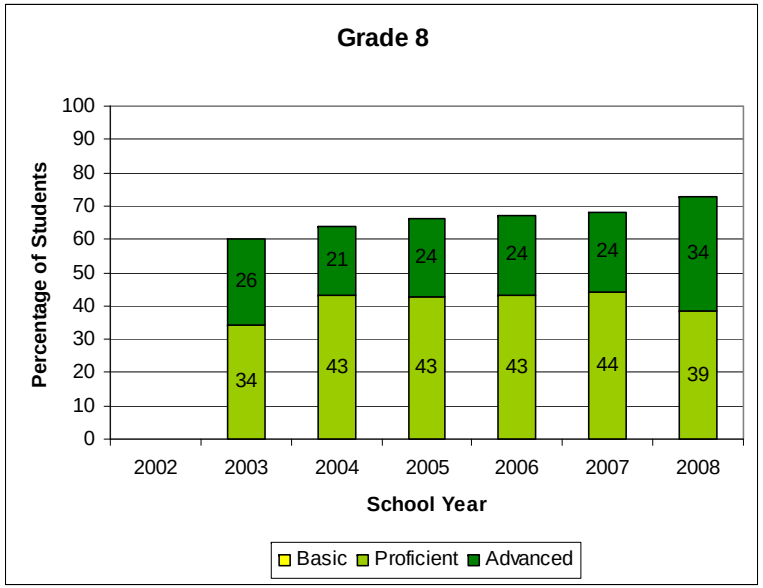
- The bars do not total 100% because students who score at the basic or *below* basic levels are not displayed.

- By looking at the percentages in each segment of the bars, one can see how achievement trends at different levels interact. Ideally, one would want to see increases at all three levels, as more students move from below basic to basic achievement, from basic to proficient, and from proficient to advanced. But other scenarios may also be illuminating. For example, if the percentage proficient has grown while the percentages advanced has shrunk, this suggests most of the academic attention was focused on moving "bubble kids" from the basic to proficient levels, with little or no attention to the highest-performing students.

- Some states use different labels for their achievement levels instead of basic, proficient, and advanced. The specific state labels are listed in the Test Characteristics section at the beginning of this profile.

Figure MD-3. Percentages of Students Scoring at the Advanced, Proficient, and Basic Levels in Reading





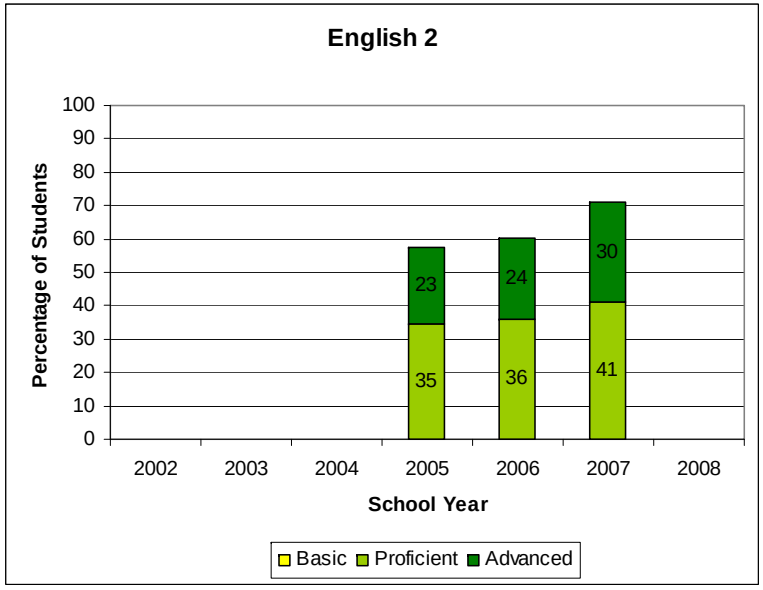


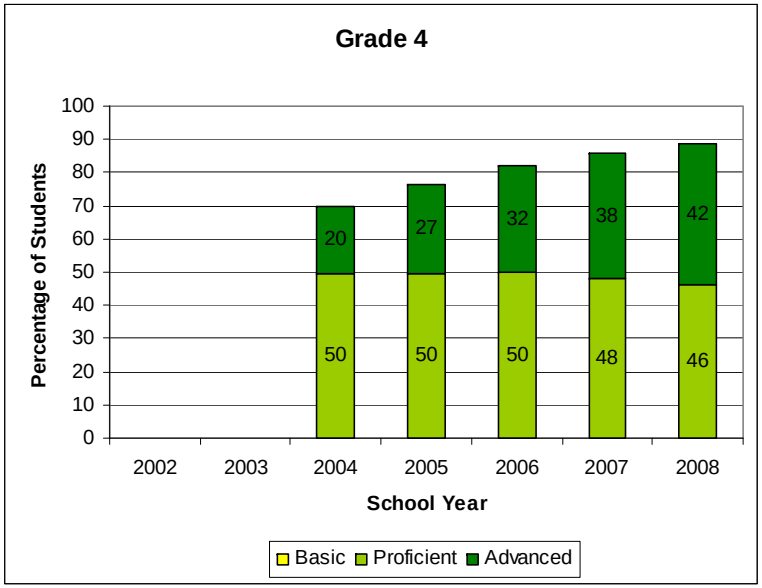
Table MD-3. Percentages of Students Scoring at the Advanced, Proficient and Above, and Basic and Above Levels in Reading

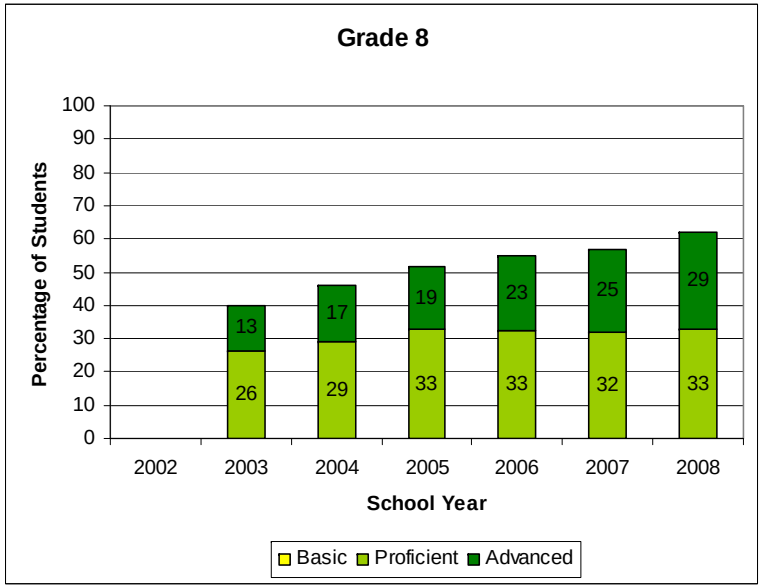
Achievement Level	Reporting Year							Average Yearly Percentage Point Gain[1]
	2002	2003	2004	2005	2006	2007	2008	
Grade 4								
Advanced			16%	18%	23%	25%	28%	3.0
Proficient and Above			75%	81%	82%	86%	89%	3.4
Basic and Above			NA	NA	NA	NA	NA	NA
Grade 8								
Advanced		26%	21%	24%	24%	24%	34%	1.7
Proficient and Above		60%	64%	66%	67%	68%	73%	2.6
Basic and Above		NA	NA	NA	NA	NA	NA	NA
English 2								
Advanced				23%	24%	30%		NA
Proficient and Above				57%	60%	71%		NA
Basic and Above				NA	NA	NA		NA

Table reads: The percentage of 4th graders who scored at the advanced level on their state reading test increased from 16% in 2004 to 28% in 2008. During this period, the average yearly gain in the percentage advanced was 3.0 percentage points per year in grade 4 reading.

[1]Averages are subject to rounding error.

Figure MD-4. Percentages of Students Scoring at the Advanced, Proficient, and Basic Levels in Mathematics





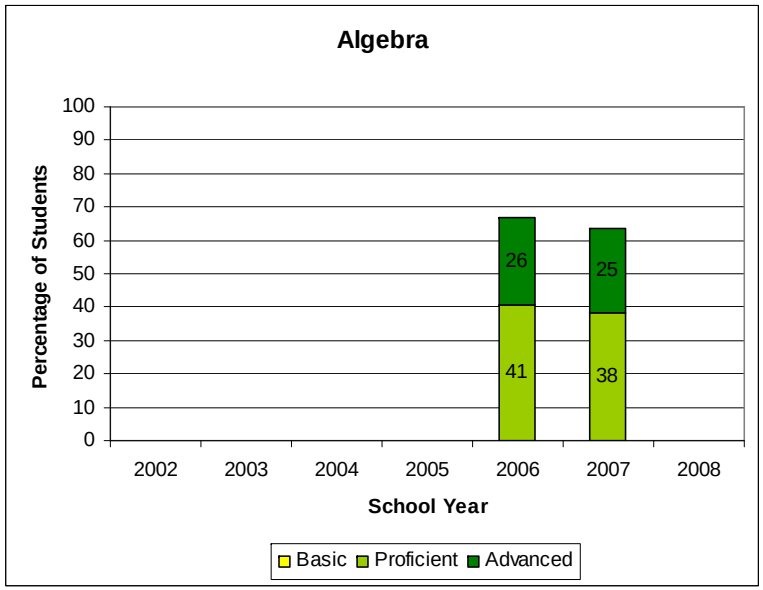


Table MD-4. Percentages of Students Scoring at the Advanced, Proficient and Above, and Basic and Above Levels in Mathematics

Achievement Level	Reporting Year							Average Yearly Percentage Point Gain[1]
	2002	2003	2004	2005	2006	2007	2008	
Grade 4								
Advanced			20%	27%	32%	38%	42%	5.6
Proficient and Above			70%	77%	82%	86%	89%	4.8
Basic and Above			NA	NA	NA	NA	NA	NA
Grade 8								
Advanced		13%	17%	19%	23%	25%	29%	3.1
Proficient and Above		40%	46%	52%	55%	57%	62%	4.4
Basic and Above		NA	NA	NA	NA	NA	NA	NA
Algebra								
Advanced					26%	25%		NA
Proficient and Above					67%	64%		NA
Basic and Above					NA	NA		NA

Table reads: The percentage of 4th graders who scored at the advanced level on their state math test increased from 20% in 2004 to 42% in 2008. During this period, the average yearly gain in the percentage advanced was 5.6 percentage points per year in grade 4 math.

[1]Averages are subject to rounding error.

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.