## ARKANSAS EDUCATION REPORT <br> Volume 5, Issue 2

# WHAT DOES THE NAEP TELL US ABOUT STUDENT ACHIEVEMENT IN ARKANSAS? 

By:<br>Sarah B. Kent<br>Nathan C. Jensen<br>Gary W. Ritter

August 28, 2008

Office for Education Policy
University of Arkansas
211 Graduate Education Building
Fayetteville, AR 72701
Phone: (479) 575-3773
Fax: (479) 575-3196
E-mail: oep@uark.edu

## Table of Contents

Executive Summary ..... iii
I. Introduction ..... 1
II. Current NAEP Performance ..... 2
A. Math 2007 ..... 2
B. Reading 2007 ..... 3
C. Writing 2002 \& 2007 ..... 3
D. Science 2005 ..... 5
E. Summary of Current NAEP Results ..... 5
III. Arkansas NAEP Scores Over Time ..... 7
A. Math 1992-2007 ..... 7
B. Reading 1992-2007 ..... 8
IV. Achievement Gaps ..... 10
A. Racial Gaps ..... 10

1. Math 2007 ..... 10
2. Reading 2007 ..... 13
B. Poverty Gaps ..... 16
3. Math 2007 ..... 16
4. Reading 2007 ..... 16
V. Conclusions \& Implications ..... 19

## EXECUTIVE SUMMARY

In this report, we discuss current and historical data from the National Assessment of Educational Progress (NAEP) in math, reading, science, and writing, comparing Arkansas students' results on the NAEP to the national average and the performance of other states in the region. As discussed in the OEP policy brief, Are All State Exams Equal? (August 2008), it is important to analyze student achievement using national test results, in part because state results are generally less rigorous and are inconsistent among states, rendering state-by-state comparisons difficult, if not meaningless.

In Figure 1, we provide an example of NAEP performance data that will be highlighted in this report. Figure 1 illustrates the percentage of Arkansas students in Grades 4 and 8 scoring at the proficient or advanced level, as well as the national average and regional performance in these same areas. On average, students in Grade 4 in Arkansas have nearly met the national average on the NAEP examinations administered during the 2006-07 school year, and rank near the top among states in the region. Grade 8 students, however, in math and reading, continue to perform below the national average, and rank in the middle compared to other states in the region.

Figure 1: Percentage of Students Scoring Proficient or Advanced on the NAEP, 2007


Source: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2007 http://nces.ed.gov/nationsreportcard/

Other notable trends emerge when comparing Arkansas student performance to the national average and other states in the region. Examples of these trends include:

- Arkansas students perform slightly below the national average in reading, math, science, and writing, though they tend to be in the mid-to-upper rankings for this region.
- Arkansas students perform less well in Grade 8 than in Grade 4. This seems to be a common trend throughout the region and the nation, but Arkansas generally has a greater disparity. For example, in math, $37 \%$ of Arkansas students in Grade 4 performed at the proficient or advanced level, compared to $24 \%$ of students in Grade 8. This represents a difference of 13 percentage points for Arkansas students, while the national average reflects a difference of eight percentage points for students in Grades 4 and 8.
- Arkansas students, as well as students across the nation, have shown dramatic improvement in math, but only moderate improvement in reading. For example, Grade 4 students in Arkansas improved from $10 \%$ scoring proficient or advanced on the NAEP math exam in 1992 to $37 \%$ in 2007. However, during that same time period, Arkansas students improved from $23 \%$ scoring proficient or advanced to $29 \%$ on the reading exam.
- Arkansas student performance has steadily increased over time, usually at a rate greater than the national average. For example, $10 \%$ of Arkansas students in Grade 8 scored proficient or advanced on the 1992 NAEP math, compared to $24 \%$ in 2007. This represents a difference of 14 percentage points, while the national average increased by only 11 percentage points during the same time period.
- Overall, Arkansas student achievement on the NAEP is improving. While Arkansas has a high number of students in poverty (a trend generally associated with low levels of achievement), Arkansas students move closer to the national average each year, and continue to show improvement compared to other states in the region.

Also highlighted in this paper are current levels of achievement on the NAEP for student subgroup populations (black and Hispanic students compared to white students, and students eligible for free and reduced lunch compared to students who are not eligible for the program). This analysis of achievement gaps focuses on the most recent administration of the NAEP exam only and reveals troubling areas of poor performance for important student sub-groups. For a more detailed investigation of achievement gaps in Arkansas, see Dollars for Sense: Assessing Achievement Gaps in Arkansas in the Context of Substantial Funding Increases (posted in August 2008), which provides an examination of achievement gaps on the NAEP in Arkansas over time, as well as on the Arkansas Benchmark examination and the ACT.

# What Does The NAEP Tell Us About Student Achievement in Arkansas? 

## I. INTRODUCTION

Recently, policymakers at the Arkansas Department of Education were pleased to release the results of the 2008 Benchmark exams, which indicate more Arkansas students are becoming proficient each year. This is good news for Arkansas, as the Benchmark exam is an Arkansasdeveloped exam used to compare student performance to state standards. Nevertheless, it is also important to take note of how Arkansas students perform compared to students across the nation, which is where the National Assessment of Educational Progress (NAEP) plays an important role. The NAEP, also known as "the Nation's Report Card," allows student performance to be compared state-to-state. It is one of the only nationally representative and continuing assessments of what America's students know and can do in various subject areas. It also known for being more rigorous than some state standards. Students across the country are periodically assessed on the NAEP, in such areas as reading, mathematics, science, writing, U.S. history, civics, geography, and the arts. In recognition of the necessity to assess student performance, No Child Left Behind (NCLB) mandates that all states participate in the regular administration of the NAEP exams.

Students from public and nonpublic schools in grades 4,8 , and 12 participate in the regular test administration. The NAEP, conducted by the U.S. Department of Education's National Center for Education Statistics (NCES), provides scores for aggregate populations rather than for individual students and schools. Specifically, the NAEP provides results assessing subject-matter achievement for overall student populations and for sub-groups within student populations (e.g. black students, Hispanic students, students eligible for free and reduced lunch).

By measuring a representative sample from each participating state, NCES began providing state-level data from the NAEP in 1990. The state assessments mirror the national assessment except separate representative samples are selected for each participating state. This state-level data provides insight into how Arkansas students are performing in comparison to students in neighboring states and across the country. The primary goal of this report is to highlight current and past performance of Arkansas students on the state-administered math and reading NAEP exams. The writing and science NAEP exams will be discussed briefly, but the tests have not been administered enough times to establish long-term trends of student performance in these areas.

We have grouped this report into three sections. In the first section, we provide a detailed analysis of Arkansas student performance compared to the nation and the region for the most recent NAEP administration. In the next section, we examine how Arkansas students have performed on the NAEP over time, to determine if our students have shown improvement since NCES began providing state-level data. In the final section, we report the performance of student sub-group populations to highlight current achievement gaps on the NAEP for students in Arkansas. For all three sections, we have chosen to report performance on the NAEP as the percentage of students scoring in the proficient or advanced range because this measure is easily interpreted by policymakers and the public.

## II. Current NAEP PERFORMANCE

## A. Math 2007

The 2007 NAEP results for math indicate that Arkansas students are below the national average in math performance, as are most of the students in the region. Figure 2 presents the percentage of students scoring proficient or advanced on the math assessment for the nation, Arkansas, and the region.

Figure 2: Percent of Students Scoring Proficient or Advanced on the NAEP Math Exam, 2007


Source: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2007 Math Assessment http://nces.ed.gov/nationsreportcard/

Arkansas students are below the national average in percent proficient or advanced in both Grade 4 and Grade 8; however, Grade 4 Arkansas students are closer to the national average than are Grade 8 students. Arkansas students in Grade 4 were ranked 32 out of $51^{1}$ and Grade 8 students were ranked 40 out of $51^{2}$.

When compared to performance in the region, Arkansas students in Grade 4 and Grade 8 are performing at higher levels than students in Louisiana, Mississippi, Oklahoma, and Tennessee; however, students in Missouri and Texas outperformed Arkansas students.

Across the nation, students are performing better in Grade 4 than in Grade 8, but the discrepancy is greatest in Arkansas. In math, $37 \%$ of Arkansas students in Grade 4 performed at the proficient or advanced level, compared to $24 \%$ in Grade 8. This represents a difference of 13 percentage points, while the national average reflects a difference of eight percentage points.

[^0]
## B. Reading 2007

Much like the math results, the 2007 NAEP reading results indicate that Arkansas students are below the national average in reading performance, as are most of the students in the region (with the exception of students in Missouri). Figure 3 presents the percentage of students scoring proficient or advanced on the 2007 reading assessment for the nation, Arkansas, and the region.

Figure 3: Percent of Students Scoring Proficient or Advanced on the NAEP Reading Exam, 2007


Source: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2007 Reading Assessment http://nces.ed.gov/nationsreportcard/

A review of Figure 3 reveals that Arkansas students are below the national average in both Grades 4 and Grade 8. Nationally, Grade 4 Arkansas students were ranked 34 out of $51^{3}$ and Grade 8 students were ranked 40 out $51^{4}$. Compared to the region, Arkansas students in Grade 4 and Grade 8 are performing at higher levels than students in Louisiana and Mississippi and at levels similar to students in Oklahoma, Tennessee, and Texas. Students in Missouri are performing at higher levels than Arkansas students.

In Arkansas, in the region, and in the nation, students in Grade 4 are performing better than those in Grade 8; however, the discrepancy is greatest in Arkansas, with a difference of four percentage points, compared to the national average with a difference of three percentage points between Grades 4 and 8.

## C. Writing 2002 \& 2007

The NAEP writing tests were conducted in 2007 for Grade 8; the most recent writing assessment for Grade 4 was conducted in 2002. Figure 4 presents the percentage of students scoring

[^1]proficient or advanced on the NAEP writing assessments for the nation, Arkansas, and the region.

Figure 4: Percent of Students Scoring Proficient or Advanced on the NAEP Writing Exam, 2002 \& 2007


Source: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2002 and 2007 Writing Assessments http://nces.ed.gov/nationsreportcard/

The 2007 NAEP results for writing indicate that Arkansas students in Grade 8 fall below the national average in writing performance, as do students in other states in the region. Arkansas students in writing were ranked 33 out of $44^{5}$ for Grade 4 and 29 out of $45^{6}$ for Grade 8 . Across the region, Arkansas students in Grade 8 are performing at similar levels to students in Missouri, Oklahoma and Texas, and at higher levels than students in Louisiana and Mississippi. Only Tennessee currently has a higher percentage of students scoring in the proficient or advanced range. In 2002, the Grade 4 students in Arkansas were being outperformed by Missouri, Tennessee, and Texas.

Unlike the reading and math assessment results, the percentage of students scoring proficient or advanced (as reflected in Figure 4) indicate that students in Grade 8 in 2007 performed at a higher level than students in Grade 4 in 2002, with the exception of students in Texas. These results suggest that writing proficiencies, in general, have improved since the previous NAEP administration. Compared to students in the region, Arkansas has demonstrated one of the greatest improvements (eight percentage points) since 2002, with only Oklahoma showing more improvement.

[^2]
## D. Science 2005

On the most recent NAEP science exam, conducted in 2005, Arkansas students were below the national average, as is the case on other exams. In science, Arkansas students were performing at levels similar to many of the students in the region. Figure 5 presents the percentage of students scoring proficient or advanced on the science assessment for the nation, Arkansas, and the region.

Figure 5: Percent of Students Scoring Proficient or Advanced on the NAEP Science Exam, 2005


Source: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2005 Science Assessment http://nces.ed.gov/nationsreportcard/

As reflected in Figure 5, Arkansas students in both grades were performing at higher levels than were students in Louisiana and Mississippi, and they were performing at approximately the same levels as students in Oklahoma, Tennessee, and Texas. However, as was the case in math and reading, students in Arkansas performed at lower levels than those in Missouri. Arkansas students in science were ranked 34 out of $44^{7}$ for Grade 4 and 31 out of $44^{8}$ for Grade 8 .

## E. Summary of Current NAEP Results

Across all subject areas, Arkansas students tend to perform slightly below the national average, toward the bottom in national rankings, but in the mid-range for the region. Compared to other states in the region, Arkansas students in Grade 4 perform near the top in reading and math, with students in Grade 8 performing near the midpoint in both subjects. In writing, Arkansas students in Grade 8 rank near the top within the region.

The highest percentage of students in Arkansas scoring proficient or advanced occurred on the NAEP math examination for students in Grade 4. However, the highest national ranking for

[^3]Arkansas students occurred on the NAEP writing exam for Grade 8 students (29 out of 45). Conversely, the examination with the lowest percentage of Arkansas students scoring in the proficient to advanced range and the lowest national ranking ( 40 out of 51) was the Grade 8 NAEP math exam.

These results suggest that elementary students across Arkansas are doing better than their peers in middle school. This may indicate that our recent curricular reforms are working well but need time to catch on school throughout all levels. Either way, these trends reveal a potential concern with middle school curricula and performance that education leaders in the state should address.

## III. Arkansas NAEP Scores Over Time

In this section we examine trends on the NAEP math and reading examinations from 1992 to 2007. We have chosen to exclude results from the NAEP writing and science exams because they have not been administered frequently enough during the same time period, to establish long-term trends for student performance.

## A. Math 1992-2007

The percentage of Arkansas students in Grade 4 scoring proficient or advanced on the NAEP math exam has increased dramatically since the first administration of the exam, increasing from $10 \%$ in 1992 to $37 \%$ in 2007 (see Figure 6). Students in Grade 8 have also demonstrated sizable improvement, increasing from $10 \%$ in 1992 to $24 \%$ in 2007 (see Figure 7).

As Figures 6 and 7 illustrate, Arkansas students in Grades 4 and 8 have also shown improvement among states in the region since 1992. Again, Grade 4 students are almost at the top for regional performance; however, this trend is not reflected in the performance of Grade 8 students; they continue to perform near the midpoint for regional performance. For Grade 4 students across the region, Texas has held the top position in math since 1996, and Missouri has historically held the top position for Grade 8 students in this same area. Arkansas students in both Grades 4 and 8 are also moving closer to the national average and climbing up in the regional rankings. These trends appear to be a positive indication that the education system in Arkansas is improving. However, while we might applaud that Grade 4 students in Arkansas perform at the same rate as most of the students across the country, we should be concerned that fewer than 1 of 4 students in Grade 8 perform at proficient or advanced levels.

Figure 6: Grade 4 Students in the Region Scoring Proficient or Advanced in Math, 1992-2007


Figure 7: Grade 8 Students in the Region Scoring Proficient or Advanced in Math, 1992-2007


Source: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP) http://nces.ed.gov/nationsreportcard/

## B. Reading 1992-2007

Since Arkansas began administering the reading NAEP exam (1992 for Grade 4 and 1998 for Grade 8), students in Arkansas have consistently performed below the national average, but have steadily moved toward the top rankings of the region, as reflected in Figures 8 and 9. Students in Grade 4 have generally demonstrated improvement in reading. Despite a slight decline in 2007, the general trend has been upward for Arkansas and other states in the region. After an initial spike from 1998 to 2002, reading performance for Grade 8 students has declined slightly in Arkansas and throughout the region. However, Arkansas students in Grade 8 have been scoring in the mid-range compared to their peers in the region. Overall, in Arkansas, the region, and the nation, the trends in reading performance indicate that student achievement has experienced little change over time. This stands in stark contrast to the vast improvements made in math for Arkansas, the region, and the nation.

Figure 8: Grade 4 Students in the Region Scoring Proficient or Advanced in Reading, 1992-2007


Source: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP) http://nces.ed.gov/nationsreportcard/

Figure 9: Grade 8 Students in the Region Scoring Proficient or Advanced in Reading, 1998-2007
40\%

Source: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP) http://nces.ed.gov/nationsreportcard/

## IV. ACHIEVEMENT GAPS

The NAEP provides various sub-group data that allow for the analysis of achievements between students of different racial and income classifications. In this section, we examine the various achievement levels of students from differing racial and economic backgrounds to assess gaps in achievement and compare these Arkansas gaps to gaps in other states in the region and across the nation.

## A. Racial Gaps

This section analyzes achievement gaps between white students and black students (white-black gap) and between white students and Hispanic students (white-Hispanic gap).

## 1. Math 2007

Figure 10 highlights the racial achievement gaps for Grade 4 students in Arkansas, the region, and the nation; Figure 11 highlights the gaps for Grade 8 students in these areas. In both figures, the percentage of students scoring proficient and advanced is noted, as well as the difference in performance levels between the two student populations for Arkansas and the nation.

Arkansas students in Grade 4 have one of the largest differences between white and black students on the NAEP math exam in the region (34 percentage points), but the gap is smaller than the national average of 36 percentage points. Arkansas students in Grade 4 also have one of the largest gaps in the region between Hispanic and white students on the NAEP math exam ( 24 percentage points); this gap is also smaller than the national average of 29 percentage points.

The primary reason these gaps are so important and problematic is illustrated by the Grade 4 performance on the 2007 NAEP math exam. On this measure, only $12 \%$ of black students and $22 \%$ of Hispanic students in Arkansas perform at the proficient or advanced level. Clearly, these numbers are cause for concern.

Compared to the region, Arkansas students in Grade 8 have a mid-sized white-black gap (37 percentage points), but the white-black gap is smaller than the national average of 40 percentage points. Arkansas students in Grade 8 have one of the largest white-Hispanic gaps in the region on the math exam ( 23 percentage points), although this gap is still smaller than the national average ( 26 percentage points).

Figure 10: Grade 4 Students Scoring Proficient or Advanced in Math by Race, 2007


[^4]Figure 11: Grade 8 Students in the Region Scoring Proficient or Advanced in Math by Race, 2007


Source: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2007 Math Assessment http://nces.ed.gov/nationsreportcard/

## 2. Reading 2007

Figures 12 and 13 illustrate the racial achievement gaps on the NAEP reading for 2007. Figure 12 highlights Grade 4 student performance and Figure 13 shows Grade 8 student performance. In both figures, the percentage of students scoring proficient and advanced is noted, as well as the difference in performance levels between the two student populations for Arkansas and the nation.

On the 2007 Grade 4 NAEP reading exam, the white-black gap is similar to the national average, but tied with Texas for the highest in the region. The results also show a smaller white-Hispanic gap for Arkansas than the national average, but this achievement gap was mid-range for the region. The positive news is that Hispanic students in Arkansas are performing at similar levels to the national average; $16 \%$ of Grade 4 students in Arkansas perform in the proficient or advanced range compared to the national average of $17 \%$. Grade 8 students in Arkansas are performing at $15 \%$, compared to the national average of $14 \%$.

Arkansas' white-black gap on the Grade 8 reading test is slightly narrower than the national average ( $24 \%$ and $26 \%$, respectively) and in the mid-range for the region. However, the whiteHispanic gap for Arkansas is smaller than the national average ( $17 \%$ and $24 \%$, respectively) and small in size for the region.

Figure 12: Grade 4 Students in the Region Scoring Proficient or Advanced in Reading by Race, 2007


Source: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2007 Reading Assessment http://nces.ed.gov/nationsreportcard/

Figure 13: Grade 8 Students in the Region Scoring Proficient or Advanced in Reading by Race, 2007


Source: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2007 Reading Assessment http://nces.ed.gov/nationsreportcard/

## B. Poverty Gaps

Using school records, NCES categorizes testing data into groups of students who are eligible for the National School Lunch (NSL) program and students who are not eligible for the program. NSL allows students from lower income families to receive free or reduced-price lunches at the school cafeteria. This set of test data allows us to compare the gap between students from higher income families and students from lower income families.

## 1. Math 2007

Figure 14 illustrates the achievement gap in math between students from higher income families and those from lower income families in Arkansas, the region, and the nation. Arkansas has the widest poverty gap for Grade 4 students in the region ( 30 percentage points), but a slightly smaller gap than the national average ( 31 percentage points). For Grade 8 students, Arkansas' poverty gap ( 21 percentage points) is smaller than the national average ( 27 percentage points). In the region, only Missouri and Texas both have a wider gap in Grade 8. The larger gap in Grade 4 is connected to the high achievement of Grade 4 students from higher income households.

## 2. Reading 2007

Figure 15 illustrates the poverty gaps in reading among Arkansas students, students in other parts of the region, and students across the nation. Arkansas' poverty gap in Grade 4 reading is the same as the national gap ( 27 percentage points) and is one of the largest in the region. In Grade 8 , the poverty gap is slightly smaller than the national average ( 21 and 24 percentage points respectively) and in the middle of the group when compared to other states in the region.

In an earlier section of this report, we noted that Grade 4 students in the state have nearly "caught" up to national averages on the NAEP math and reading. This result should be encouraging for a state with a relatively high level of disadvantaged students. Indeed, the data on Grade 4 performance presented in figures 14 and 15 support this view. That is, when the student population in is divided into categories based on income, we can better assess educational performance while also "controlling" for differences in income. In Grade 4 math, both our lower income students ( $24 \%$ at proficient or advanced) outperform their peers around the nation ( $22 \%$ ) and our higher income students ( $54 \%$ at proficient or advanced) outperform their peers around the nation (53\%). Similarly, in Grade 4 reading, both higher and lower income groups of students perform on par with their peers around the nation.

For even more analyses of racial and poverty achievement gaps in Arkansas (the good news and the bad news), visit the Office for Education Policy web site for a new Arkansas Education Report focused exclusively on the issue of achievement gaps (posted in August 2008).

Figure 14: Students in the Region Scoring Proficient or Advanced in Math by SES, 2007


Source: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2007 Math Assessment http://nces.ed.gov/nationsreportcard/

Figure 15: Students in the Region Scoring Proficient or advanced in Reading by SES, 2007


Source: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2007 Reading Assessment http://nces.ed.gov/nationsreportcard/

## V. Conclusions \& Implications

So ... what does the NAEP tell us about student achievement in Arkansas? (See Figure 16 and Table 1 below for summary results.)

- In 1992, only $10 \%$ of Arkansas' Grade 4 students were proficient or better in math; this level of performance was well below the national average and the level of the topperforming state in the region. Today, that percentage has increased nearly four times and the performance of Arkansas' Grade 4 students nearly matches that of the nation and of the top performing state in the region.
- Arkansas students in Grade 8 have also made great improvements in math since the 1990s (moving from $10 \%$ proficient and advanced to $24 \%$ ), but still perform significantly below the national average.
- On the reading exam, Grade 4 students in Arkansas have also generated greater improvements since the 1990s than have their regional and national peers; today, Arkansas Grade 4 students rival their peers in Missouri for regional dominance and perform just below the national average.
- Again, in reading, the performance of Arkansas students in Grade 8 has improved in recent years, but still lags significantly behind the national average.
- These results -- particularly those in Grade 4 -- are encouraging for a state serving so many students in poverty. In fact, the NAEP reveals that the performance of our higher income Grade 4 students (and of our lower income Grade 4 students) meets or exceeds that of their peers in the region and the nation as a whole.

Figure 16: Percentage of Students Scoring Proficient or Advanced on the NAEP, 2007


Source: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2007 http://nces.ed.gov/nationsreportcard/

Table 1: Percentage of Arkansas Students Scoring Proficient or Advanced on the NAEP 2000-2007 with National Comparison and Rank


Source: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP) http://nces.ed.gov/nationsreportcard/


[^0]:    ${ }^{1}$ Ranked out of 50 states and D.C. (Top Rank $=1$ )
    ${ }^{2}$ Ranked out of 50 states and D.C. (Top Rank $=1$ )

[^1]:    ${ }^{3}$ Ranked out of 50 states and D.C. (Top Rank $=1$ )
    ${ }^{4}$ Ranked out of 50 states and D.C. (Top Rank $=1$ )

[^2]:    ${ }^{5}$ Ranked out of participating states $($ Top Rank $=1)$
    ${ }^{6}$ Ranked out of participating states (Top Rank $=1$ )

[^3]:    ${ }^{7}$ Ranked out of participating states (Top Rank $=1$ )
    ${ }^{8}$ Ranked out of participating states (Top Rank $=1$ )

[^4]:    Source: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2007 Math Assessment http://nces.ed.gov/nationsreportcard/

