

Summary Points

- Arkansas' 2017 NAEP scores were essentially unchanged from the 2015 results.
- Arkansas' NAEP scores peaked in 2013 before declining in 2015.
- The reason for Arkansas' significant decline in 4th grade Math remains unclear.
- 4th and 8th grade Math scores are lower than those of Arkansas' border states.
- 4th and 8th grade Reading scores are lower than those of Arkansas' border states.
- Math score gaps between student groups widened in 2017 due to decreased performance of at-risk groups and increased performance of other students.
- 8th grade Reading score gaps between student groups decreased slightly in 2017.
- ACT Aspire ELA performance is similar to NAEP Reading, but Math proficiency rates are higher for Act Aspire than for NAEP.

National Assessment of Educational Progress (NAEP) Results: 2017

The National Center for Education Statistics has released this year's NAEP results which measure nationwide student performance in 4th and 8th grade Reading and Math. NAEP is administered nationally to a representative sample of students from all 50 states, so acts as a standard measure of student performance across states and time. This policy brief will examine Arkansas' 2017 results and examine score gaps between student groups.

NAEP Results: Statewide

The 2017 NAEP results are consistent with the 2015 results as Arkansas' student performance essentially remained flat in all areas. This is particularly concerning because we saw a decrease in scores in 2015 that failed to 'bounce back' in 2017.

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As can be seen in Figure 1, math scores are typically higher than reading scores and 8th graders score higher than 4th graders. Although all scores declined since 2013, only the 4th grade Math results are statistically significantly different from the 2013 results. The average math scale score for Arkansas 4th graders declined 5 points from the peak in 2011, and 8th grade math scores have decline 6 points since 2013. Reading scores for both 4th and 8th graders have declined 2 and 3 points since 2013.

Over the past 14 years there has been essentially no change in reading scale scores in 4th and 8th grades. Although math scores had increased in 2011 and 2013, the 2017 results demonstrate that the decline seen in 2015 wasn't just a temporary setback in Arkansas student success.

Figure 1: Average Scale Score on Arkansas' NAEP Exams, 2003-2017

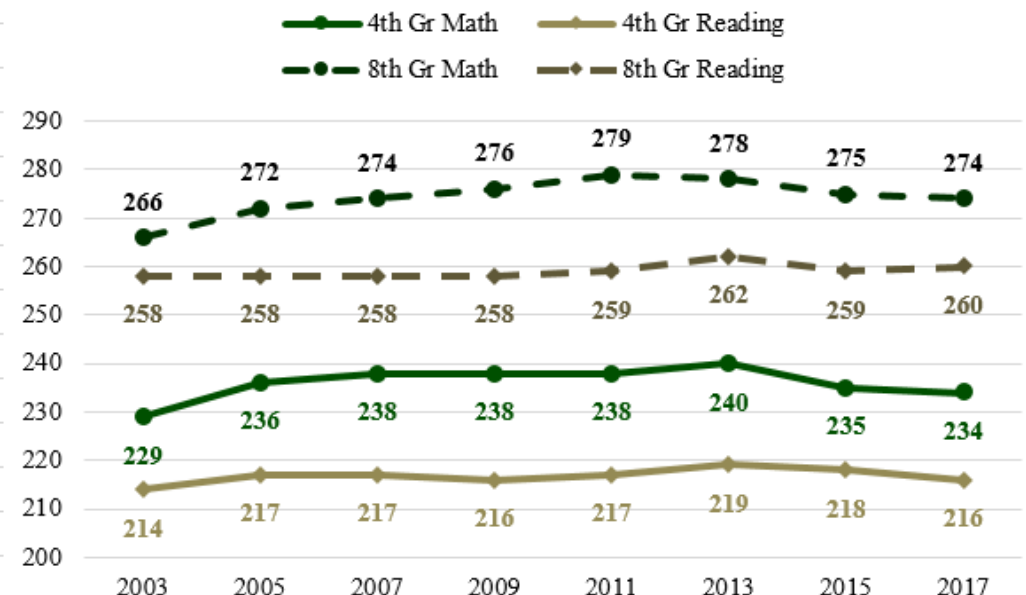


Table 1: Student Demographics for Arkansas, Border States and US, 2017

	% White	% Black	% Hispanic	% FRL
AR	62%	20%	13%	61%
Border States	50%	26%	16%	56%
US	51%	16%	24%	50%

Border States: Louisiana, Missouri, Mississippi, Oklahoma, Tennessee, Texas

Figure 2: NAEP Mean Scale Score for 4th Grade Mathematics: Arkansas, Border States and US, 2003-2017

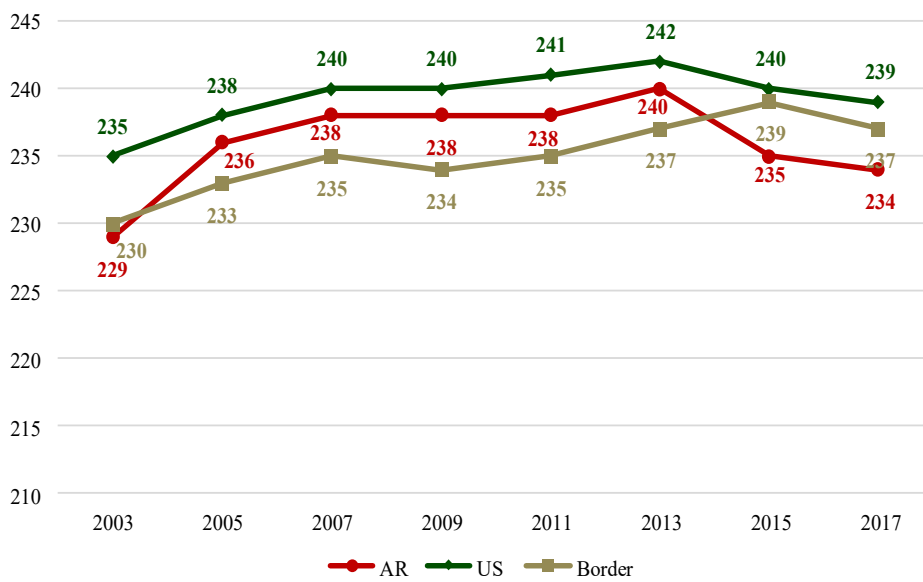
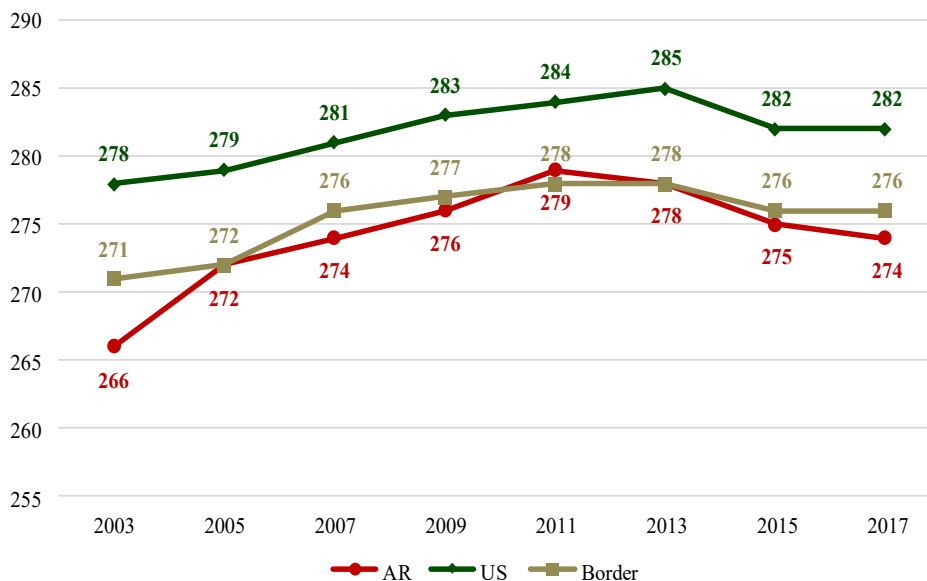


Figure 3: NAEP Mean Scale Score for 8th Grade Mathematics: Arkansas, Border States and US, 2003-2017



How Do We Compare?

Arkansas students score below the national average in Reading and Math at both 4th and 8th grade levels. As shown in Table 1, however, Arkansas has a higher percentage of students eligible for Free or Reduced Lunch (FRL) than the country as a whole. Since FRL is a proxy measure for poverty, and poverty is related to performance on standardized assessments, it is not surprising that Arkansas' performance would be lower than the national average. The percent of students eligible for FRL in the states that border Arkansas (56%) is, however, closer to Arkansas' 61% eligibility. We would then not anticipate significant differences between the performance of students in Arkansas and the students in the bordering states. Figures 2-5 reveal, however, that in 2017, Arkansas students were outperformed by students in border states.

In 4th grade Math, Arkansas was the lowest performing in comparison to its border states and the US in 2003. Yet, scores increased, and in 2005-2013, Arkansas surpassed the border states in average scaled score (see Figure 2). Then in 2015, Arkansas' score decreased five points and continued to decline slightly in 2017. The US as a whole has declined since 2013, but by a smaller amount, and maintained an average scale score that was higher than that of Arkansas and its border states.

Grade 8 Math students present a different story (see Figure 3). Once again, Arkansas had a lower average scale score in 2003 compared to its border states and the US. Over time however, Arkansas and its border states continued to have average scale scores that were similar to each other between 2005 and 2017. The trend in 8th grade math scores are similar for Arkansas, border states, and the nation: declining scores after a peak in 2011 or 2013.

Trends presented by NAEP Reading assessments differ by grade level, but Arkansas tends to follow the national trend.

In 4th grade Reading, Arkansas' average scale score was generally higher than that of its border states in 2003 through to 2013 (see Figure 4). In 2015, however, Arkansas' average scale score declined by one point while its border states experienced a nine point increase. The US had steadily increased in scale score over time, but in 2017 the US, border states, and Arkansas experienced small declines. Arkansas was the lowest performing in comparison to its border states and the US in 2017.

Arkansas' 8th grade Reading students performed similarly to its border states as its average scale score was almost exactly the same as that of the border states in 2003 through 2017 (see Figure 5). Arkansas experienced a three point decline between 2013 and 2015, which increased by one point in 2017. The US as a whole continues to have higher average scale score than Arkansas and its border states, and saw no change in overall 8th grade reading score in 2017.

Looking through Arkansas' test results through the lens of poverty and demographics, there are some inconsistencies with the results. Performance in 4th grade Reading, 8th grade Math, and 8th grade Reading is similar to the performance of border states with similar demographics. In addition, the state trends generally follow the national trends, although at a lower level. Notably, 4th grade Math scores declined significantly in Arkansas, while rising in the border states in 2013. In our [2015 NAEP report](#), we examined the possibility of a Common Core impact, but found that Arkansas' scores had declined more than other states that had adopted the Common Core.

Figure 4: NAEP Mean Scale Score for 4th Grade Reading: Arkansas, Border States and US, 2003-2017

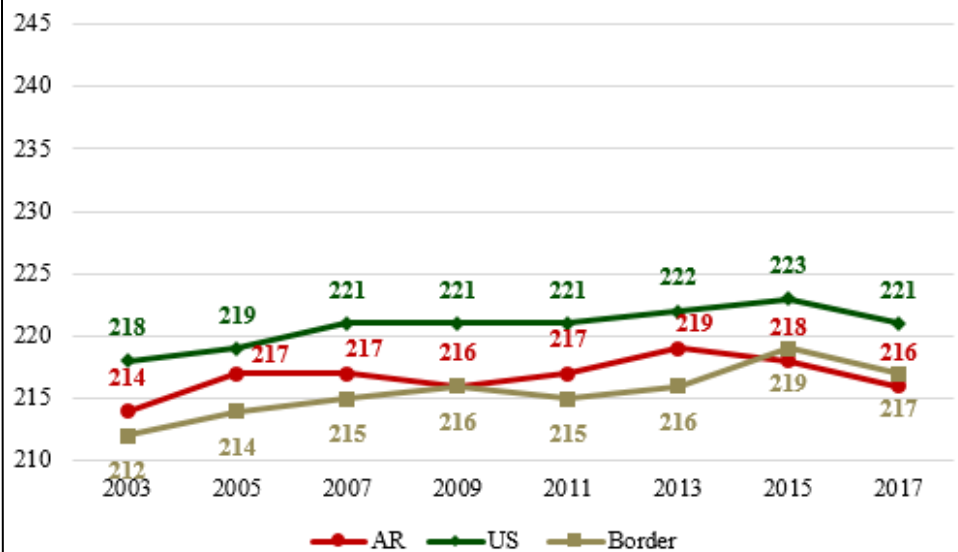
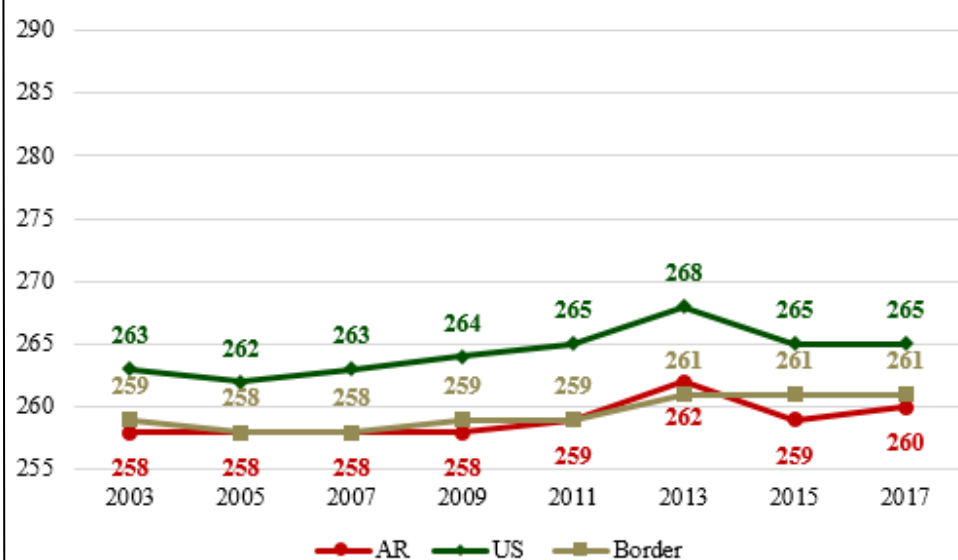


Figure 5: NAEP Mean Scale Score for 8th Grade Reading: Arkansas, Border States and US, 2003-2017



Score Gaps for Student Groups: Mathematics

Although NAEP mathematics scores haven't changed overall for Arkansas' students, it is important to examine if gaps between the performance of student groups are decreasing, increasing, or remaining the same over time. In considering score gaps, it is critical to not consider only the magnitude of the gap, but the trends behind any increase, decrease or lack of change.

For example, Figure 6 presents the NAEP math score gaps between white and black students in 4th and 8th grade math from 2003 to 2017. White students generally score 25 points higher than black students in 4th grade math and greater than 30 points higher in 8th grade math. In 2015 the score gap decreased. The decreased gap, however, was the result of declining performance for white students rather than increased performance for black students. In 2017, white student performance remained consistent, while black student performance decreased in both 4th and 8th grades. Math scores for black students are at the lowest point in over ten years.

Figure 6: Arkansas' NAEP Mean Scaled Score for Math, by race, 2003 to 2017

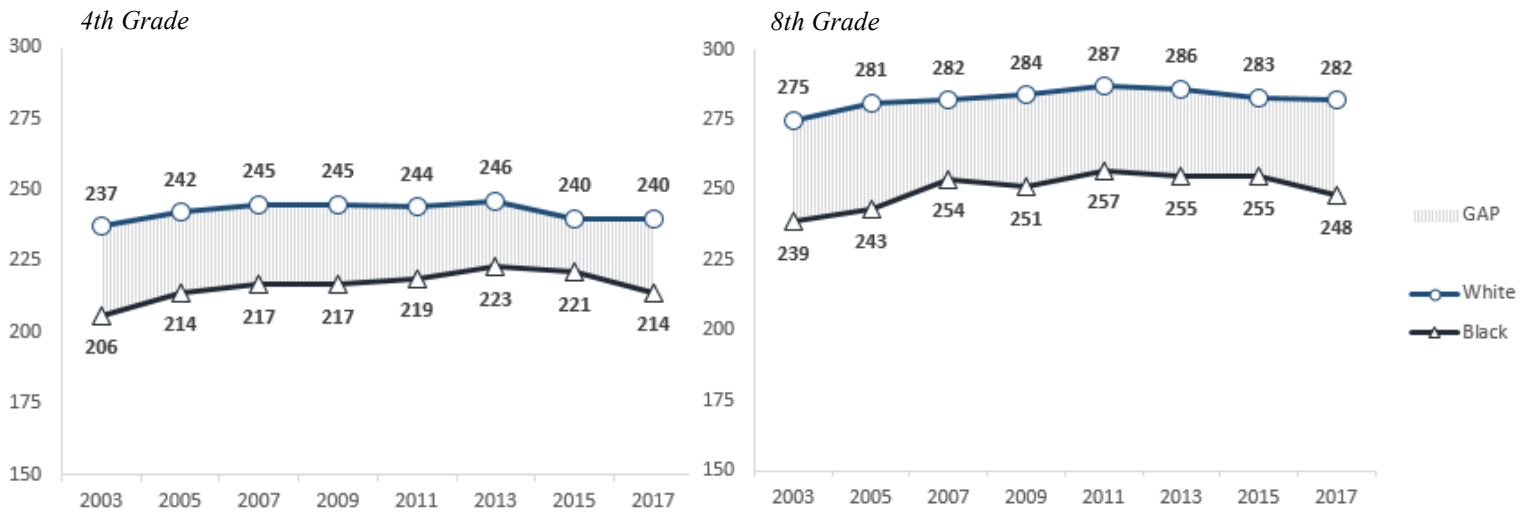
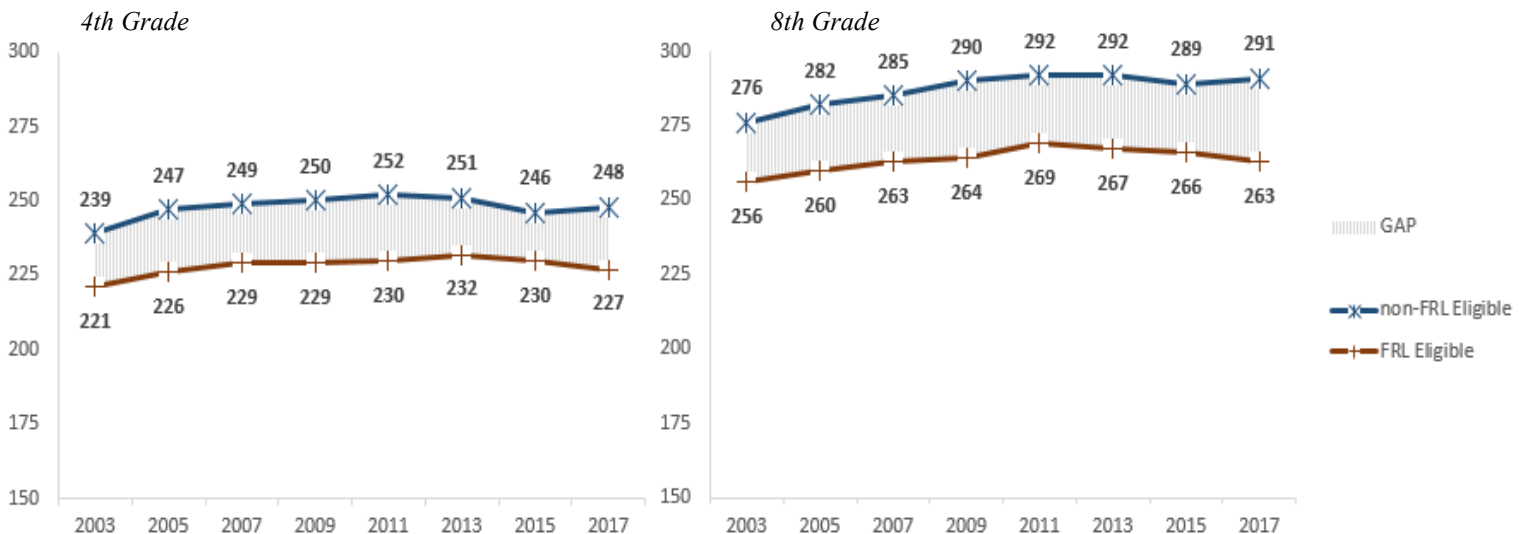


Figure 7 presents the NAEP math score gaps between students who are eligible for the federal Free/ Reduced Lunch Program and students who are not eligible. Eligibility for the program is determined by household income so this measure is often used as a proxy for poverty. The figure again includes students in 4th and 8th grade math from 2003 to 2017. Not surprisingly, students from more economically advantaged backgrounds score higher than students who face greater economic challenges. Non-FRL Eligible students generally score 20 points higher than FRL Eligible students in 4th grade math and greater than 30 points higher in 8th grade math. In 2015, the gap decreased slightly before increasing in 2017. The widening of the gap is particularly concerning due to being the result of increased scores for non-eligible students combined with decreasing scores for FRL Eligible students.

Figure 7: Arkansas' NAEP Mean Scaled Score for 4th and 8th Grade Math, by Free/ Reduced Lunch Eligibility, 2003 to 2017



Score Gaps for Student Groups: Reading

NAEP reading scores have been flat since 2003, but are gaps between the performance of student groups decreasing, increasing, or remaining the same over time? In considering reading score gaps, it is critical to not consider only the magnitude of the gap, but the trends behind any increase, decrease or lack of change.

Figure 8 presents the NAEP reading score gaps between white and black students in 4th and 8th grade from 2003 to 2017. White students generally score 25 points higher than black students in 4th grade reading and around 30 points higher in 8th grade reading. The score gap for 4th graders has decreased since 2003, reaching the smallest gap in 2015. That closure was due to increased performance of black students as well as decreased performance of white students, but the gap increased again 2017. The score gap for 8th graders has also decreased since 2003, with the smallest gaps reflected in 2013 and 2017. The gap closure was primarily the result of increased reading performance of black students.

Figure 8: Arkansas' NAEP Mean Scaled Score for Reading, by race, 2003 to 2017

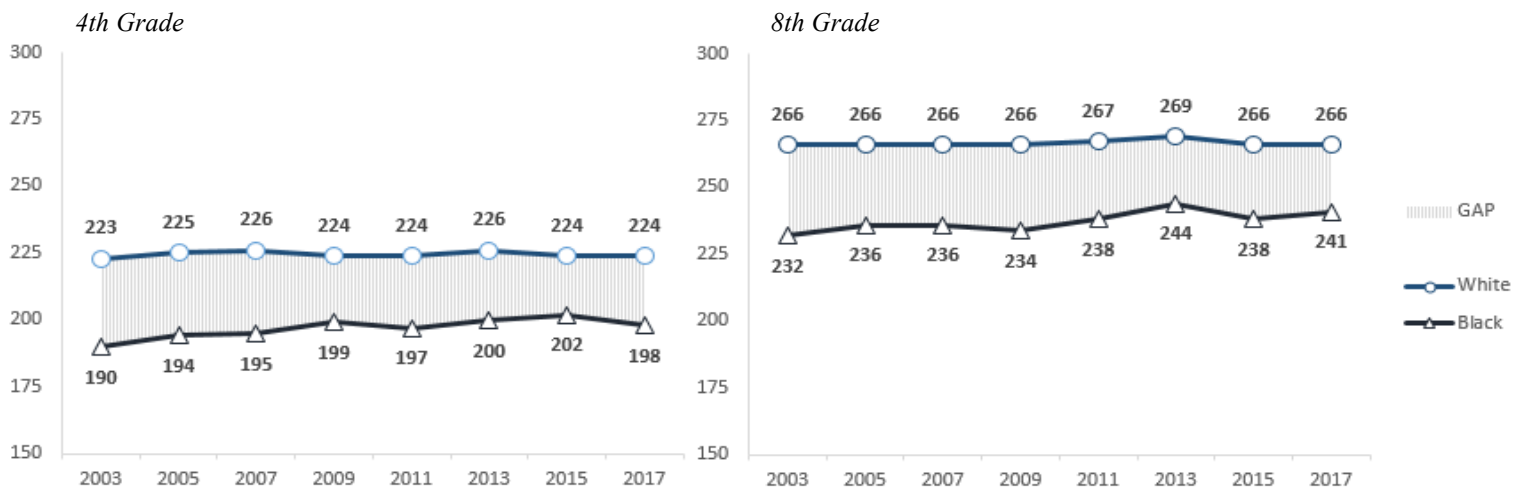
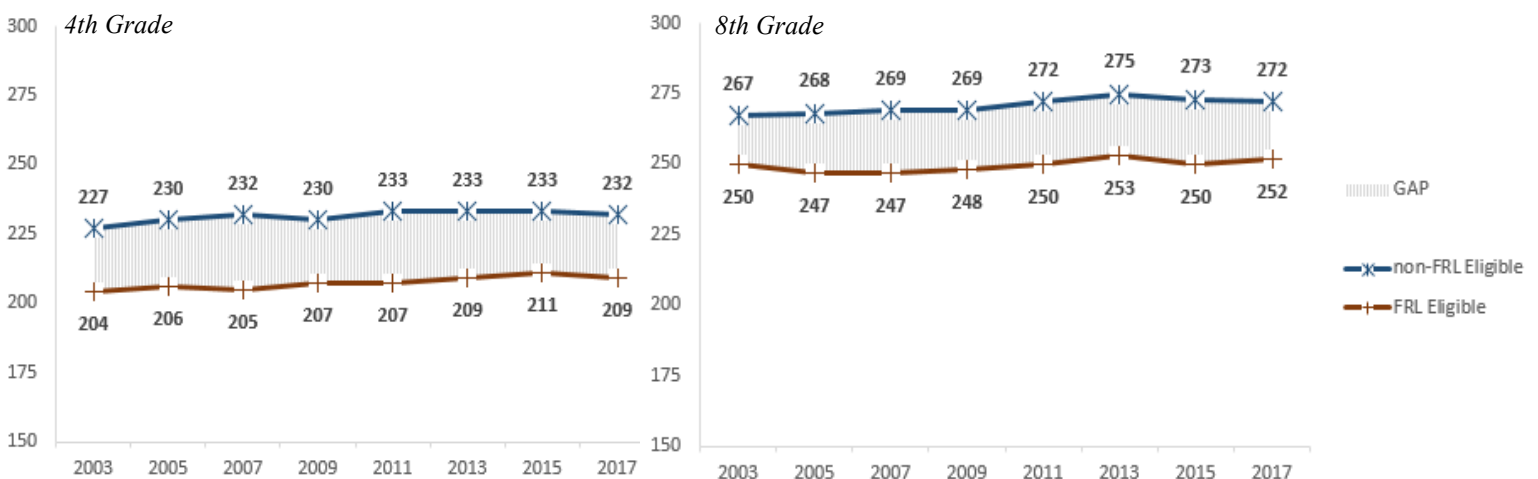


Figure 9 presents the NAEP reading score gaps between students who are eligible for the federal Free/ Reduced Lunch Program and students who are not eligible. Eligibility for the program is determined by household income so this measure is often used as a proxy for poverty. The figure again includes students in 4th and 8th grade math from 2003 to 2017. Not surprisingly, students from more economically advantaged backgrounds score higher than students who face greater economic challenges. Non-FRL Eligible students generally score more than 20 points higher than FRL Eligible students in 4th grade the gap is slightly smaller in 8th grade reading. In 2017, the gap remained consistent for 4th graders, but closed slightly for 8th graders due to increases among for FRL Eligible students.

Figure 9: Arkansas' NAEP Mean Scaled Score for Reading, by Free/ Reduced Lunch Eligibility, 2003 to 2017



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Why Aren't Scores Improving?

Arkansas is not alone in asking this question. Across the country NAEP scores generally remained flat. This was the first year that NAEP was administered electronically, but since Arkansas students have taken the state assessment online for at least two years, the change in format would be unlikely to have a negative impact on scores.

NAEP and ACT Aspire

NAEP is taken by a sample of students in 4th and 8th grades throughout the state, while the ACT Aspire is completed annually by all students in grades 3-10. If the results are similar between ACT Aspire and NAEP, it is good news for Arkansas students because both assessments are aiming at the same skills and providing similar feedback to the state, but ACT Aspire data includes all 3rd through 10th grade students every year. Figure 10 present the percent of 4th graders and 8th graders meeting or exceeding expectations on the 2017 NAEP and the 2017 ACT Aspire.

In math, students are more likely to meet standards on the ACT Aspire than on the NAEP. Only 33% of 4th graders were found to be proficient on the NAEP, while 55% of 4th graders met standards on ACT Aspire. Although the gap was smaller, a similar patterns can be seen for 8th grade: 34% were proficient on the NAEP , while 44% met standards on ACT Aspire.

In reading, students are score similarly on the NAEP and the ACT Aspire. NAEP measures reading, while ACT scores represent English Language Arts which include reading, language, and writing performance.

While ACT Aspire Reading scores are well-aligned with NAEP performance, Arkansas should be aware that state math proficiency rates might over estimate how students will perform on the NAEP. Prior to changing assessments, Arkansas students had high proficiency rates on Benchmark exams but persistently lower scores on other assessments. It is important to send students and stakeholders a clear message about how well our students are performing so we can change what isn't helping students learn and build on what is making a positive difference for Arkansas students.

Figure 10: Arkansas' 2017 NAEP Percent Proficient and ACT Aspire Percent Meeting Standards, by Grade and Content Area.

