

Summary Points

- Arkansas' NAEP scores peaked in 2013 and have declined from 2015 onwards.
- Arkansas' 2019 4th grade NAEP scores decreased slightly from 2017 results.
- The reason for Arkansas' significant decline in 4th grade Math remains unclear.
- 4th and 8th grade Math scores continue to be 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 even more in 2019 due to decreased performance of at-risk groups and increased performance of other students.
- 8th grade Reading score gaps between student groups increased slightly in 2019.
- Proficiency percentages are higher on ACT Aspire than on NAEP.

National Assessment of Educational Progress (NAEP) Results: 2019

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' 2019 results and examine score gaps between student groups.

NAEP Results: Statewide

The 2019 NAEP results show that Arkansas' 8th grade scores remain essentially unchanged over time, while 4th grade scores have been decreasing over the past six years.

As can be seen in Figure 1, Math scores continue to be higher than Reading

This Brief

- NAEP Results: Statewide **P.1**
- How Do We Compare? **P.2**
- Score Gaps: Math **P.4**
- Score Gaps: Reading **P.6**
- Why Aren't Scores Improving? **P.7**
- NAEP and ACT Aspire **P.7**

scores and 8th graders score higher than 4th graders. For all subjects and grades, scores have declined since 2013, and, with the exception of 8th grade Reading the differences are statistically significant.

The average Math scale score for Arkansas 4th graders declined 7 points from the peak in 2013, and 8th grade Math scores have declined 5 points since the high in 2011. Although Math scores had increased in 2011 and 2013, the 2019 results demonstrate that the decline seen in 2015 persisted to the current year's test results.

Reading scores for both 4th and 8th graders have declined 3 and 4 points, respectively, since 2013. Over the past 16 years there has been essentially no change in Reading scale scores in 4th or 8th grades.

Figure 1: Average Scale Score on Arkansas' NAEP Exams, 2003-2019

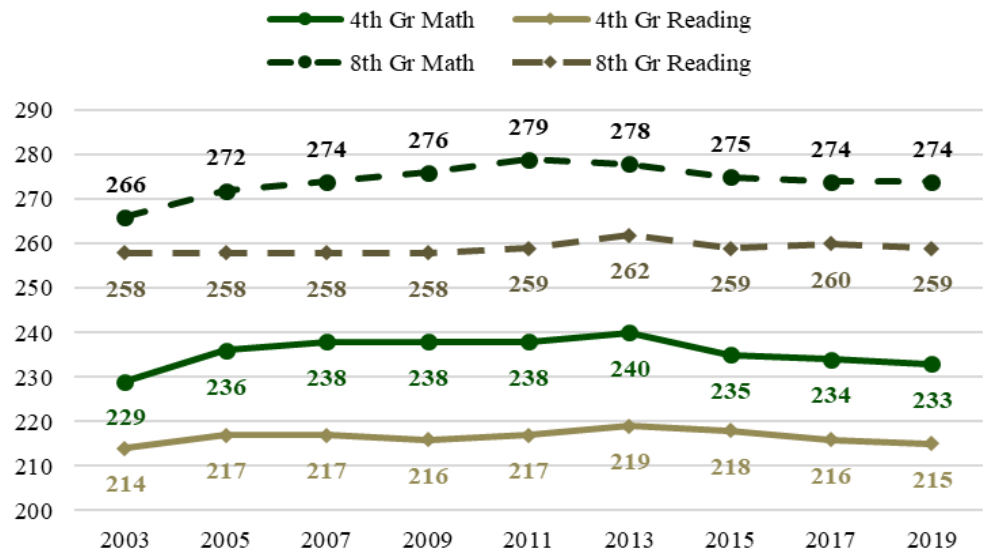


Table 1: Student Demographics for Arkansas, Border States, and US, 2019

| | % White | % Black | % Hispanic | % FRL |
|---------------|---------|---------|------------|-------|
| AR | 61% | 20% | 13% | 60% |
| Border States | 50% | 25% | 16% | 59% |
| US | 51% | 14% | 25% | 47% |

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

Figure 2: NAEP Mean Scale Score for 4th Grade Mathematics: Arkansas, Border States, and US, 2003-2019

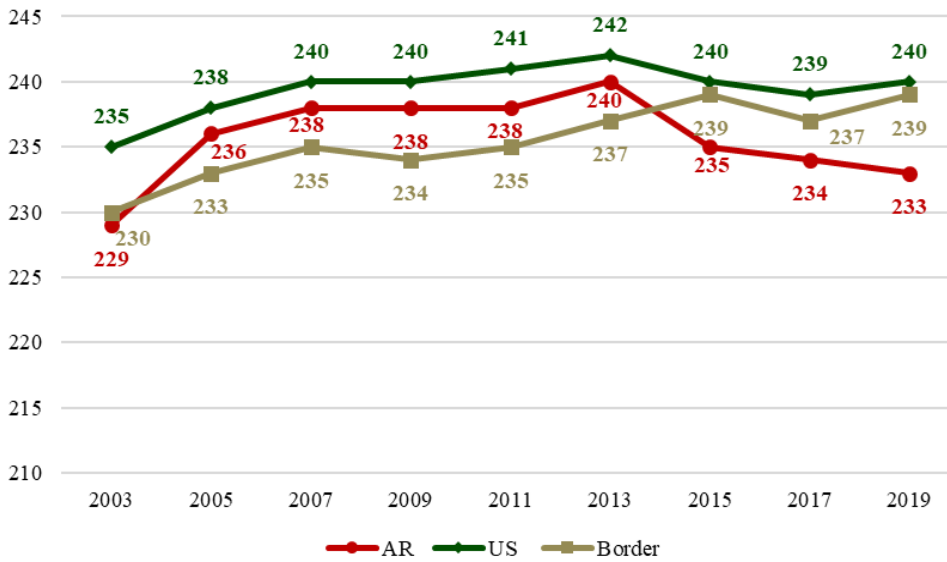
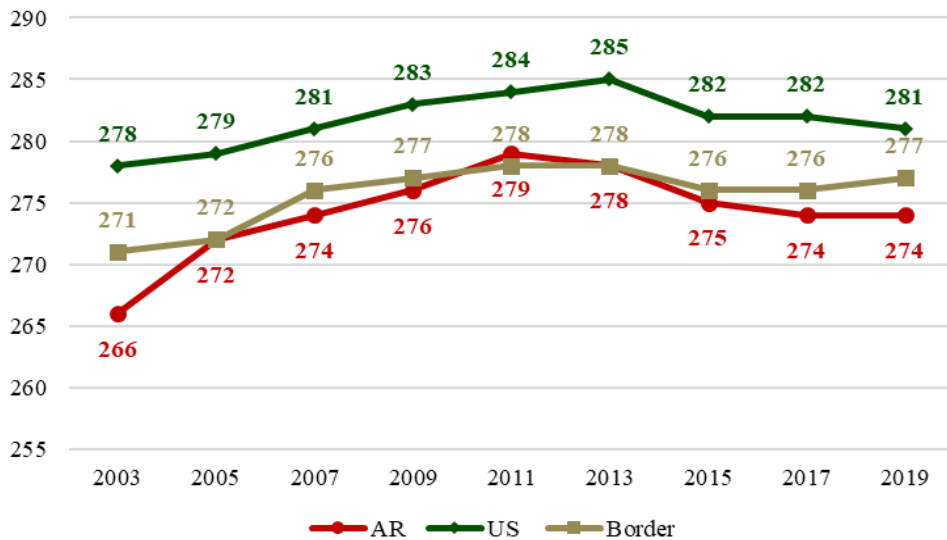


Figure 3: NAEP Mean Scale Score for 8th Grade Mathematics: Arkansas, Border States, and US, 2003-2019



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 percentage of students eligible for FRL in the states that border Arkansas (59%) is, however, closer to Arkansas’ 60% eligibility. As such, we would not anticipate significant differences between the performance of students in Arkansas and the performance of students in the bordering states. Figures 2-5 reveal, however, that from 2015 onward, students in border states have outperformed Arkansas students in both Math and Reading.

In 4th grade Math, Arkansas was the lowest performing in comparison to its border states and the US in 2003. From 2005-2013, however, Arkansas surpassed the average scale score of the border states (see Figure 2). In 2015, Arkansas’ 4th grade math score decreased five points and has continued to decline through 2019. By contrast, math scores across the US declined slightly in 2015 and have remained consistent since then, while bordering states have increased or remained consistent since 2013.

In 8th grade Math, scores 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 2015. Beginning in 2015, an increasing gap emerges between Arkansas and the border states as Arkansas’ scores plateaued between 2017 and 2019 while the bordering states scores have increased slightly. The US overall has been following a similar trend except in 2019 where its average score has decreased.

Trends presented by NAEP Reading assessments differ by grade level, but Arkansas' score changes tend 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 three point increase. The US had steadily increased in scale score over time, but in 2017 to 2019 the US, border states, and Arkansas experienced small declines. Beginning in 2015, Arkansas is lower performing in comparison to its border states in 4th grade Reading.

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 2019 (see Figure 5). Arkansas experienced a three point decline between 2013 and 2015, which increased by one point in 2017, followed by a one point decline in 2019. 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, but experienced a three point decline in 2019.

Looking through Arkansas' NAEP results through the lens of student poverty and demographics, there are some inconsistencies with the results.

In 4th and 8th grade Math, Arkansas' scores are becoming increasingly different from its border states. In general, border state Math performance has been increasing, while Arkansas' has been declining.

Performance in 4th 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.

Figure 4: NAEP Mean Scale Score for 4th Grade Reading: Arkansas, Border States and US, 2003-2019

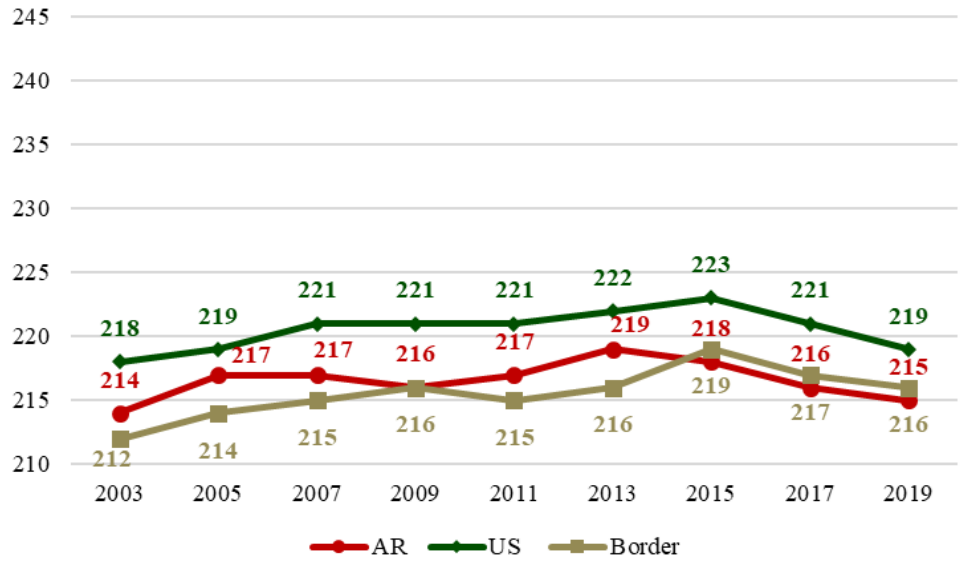
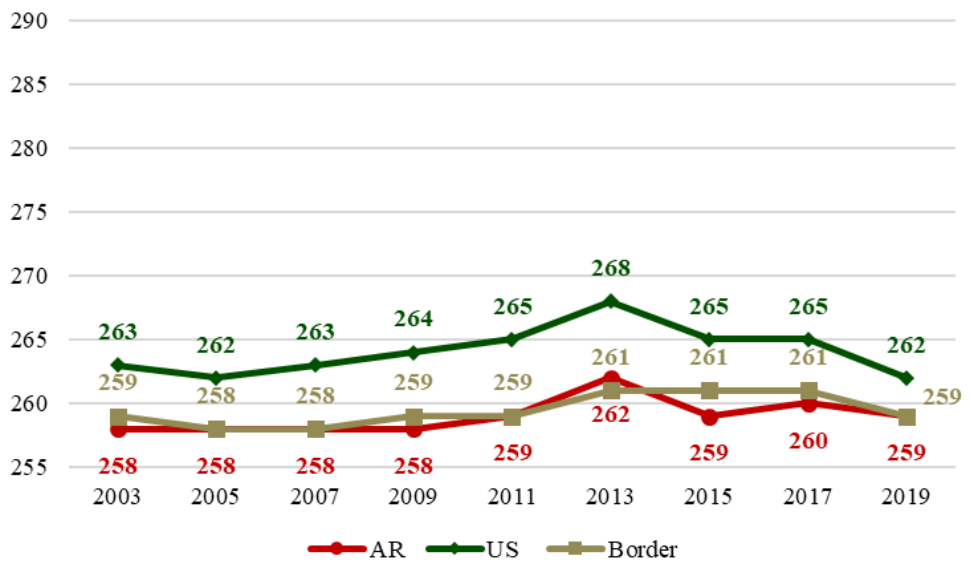


Figure 5: NAEP Mean Scale Score for 8th Grade Reading: Arkansas, Border States and US, 2003-2019



Score Gaps for Student Groups: Mathematics

With the slight decrease in certain subjects for Arkansas’ students overall, it is even more 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 only consider 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 2019. 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, however, this was the result of declining performance for white students rather than increased performance for black students. In 2017, black students in both 4th and 8th grades demonstrated declines in Math performance. Although the gap has remained fairly consistent in 4th grade, the 8th grade gap has widened due to a greater rate of increase in score among white students compared to that of black students.

Figure 6: Arkansas’ NAEP Mean Scaled Score for Math, by race, 2003 to 2019

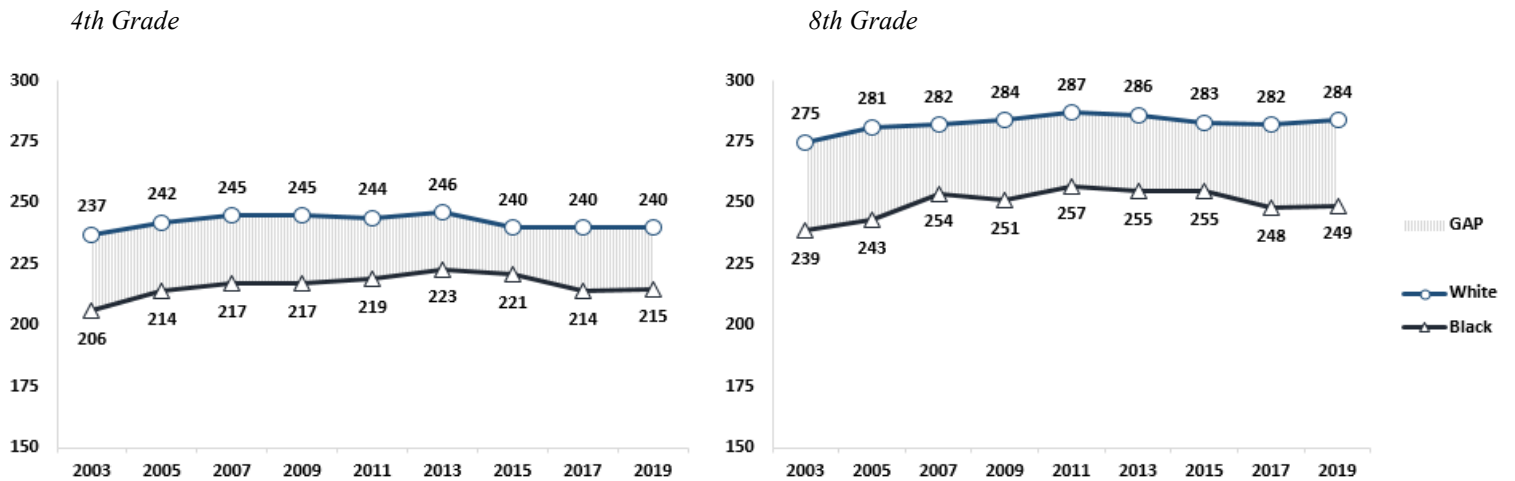
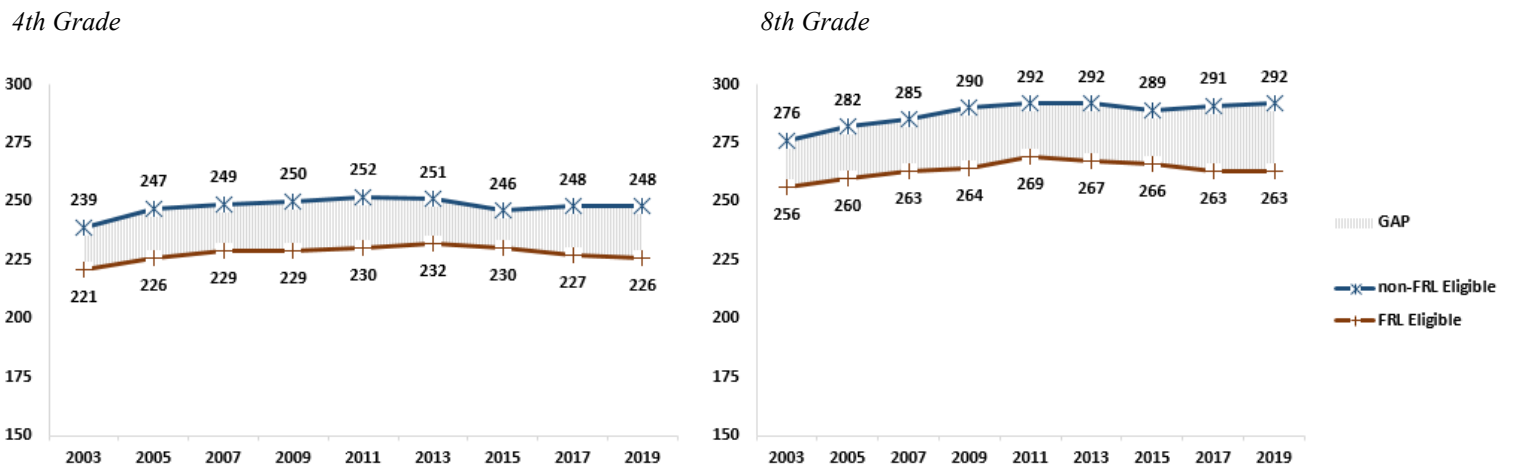


Figure 7 presents the NAEP Math score gaps between students who are eligible for the federal Free/ Reduced Lunch Program and students who are not eligible. Eligibility for the program is determined by household income so this measure is often used as a proxy for poverty. The figure again includes students in 4th and 8th grade Math from 2003 to 2019. 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 30 points higher in 8th grade Math. Since the decrease in gap in 2015, the gap has widened slightly due an increase in Math performance among non-eligible students as well as a decrease in Math performance among FRL eligible students.

Figure 7: Arkansas’ NAEP Mean Scaled Score for 4th and 8th Grade Math, by Free/ Reduced Lunch Eligibility, 2003 to 2019



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 only consider the magnitude of the gap, but also 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 2019. 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. Since 2015, however, the gap has increased slightly due to declines in black student performance. 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, though there has been a 4 point decrease since 2017 causing the 8th grade Reading gap to widen again.

Figure 8: Arkansas' NAEP Mean Scale Score for Reading, by race, 2003 to 2019

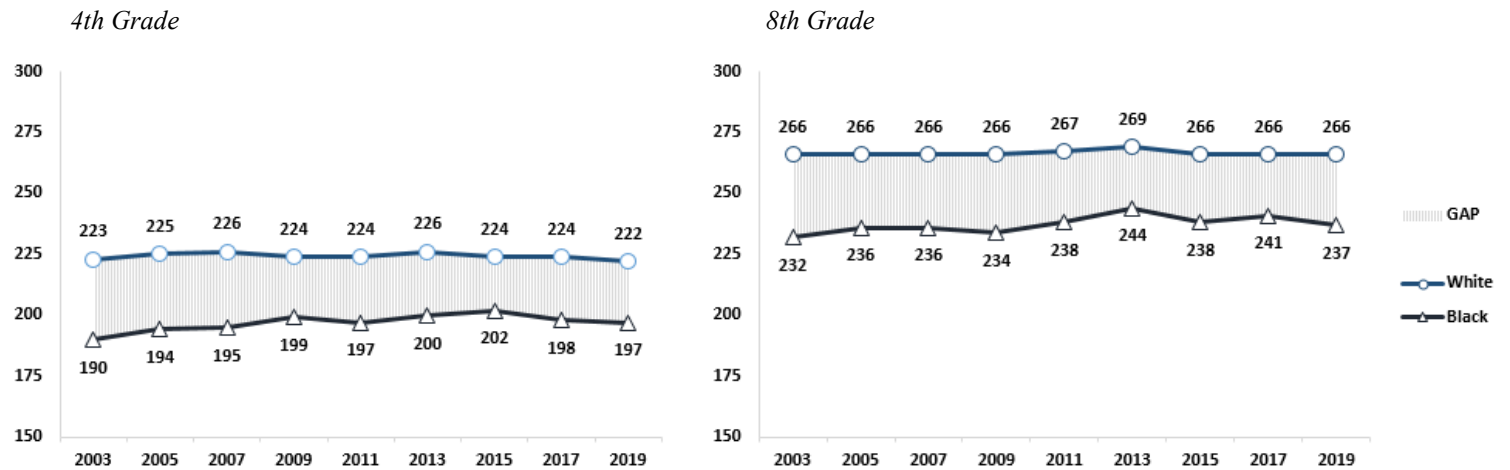
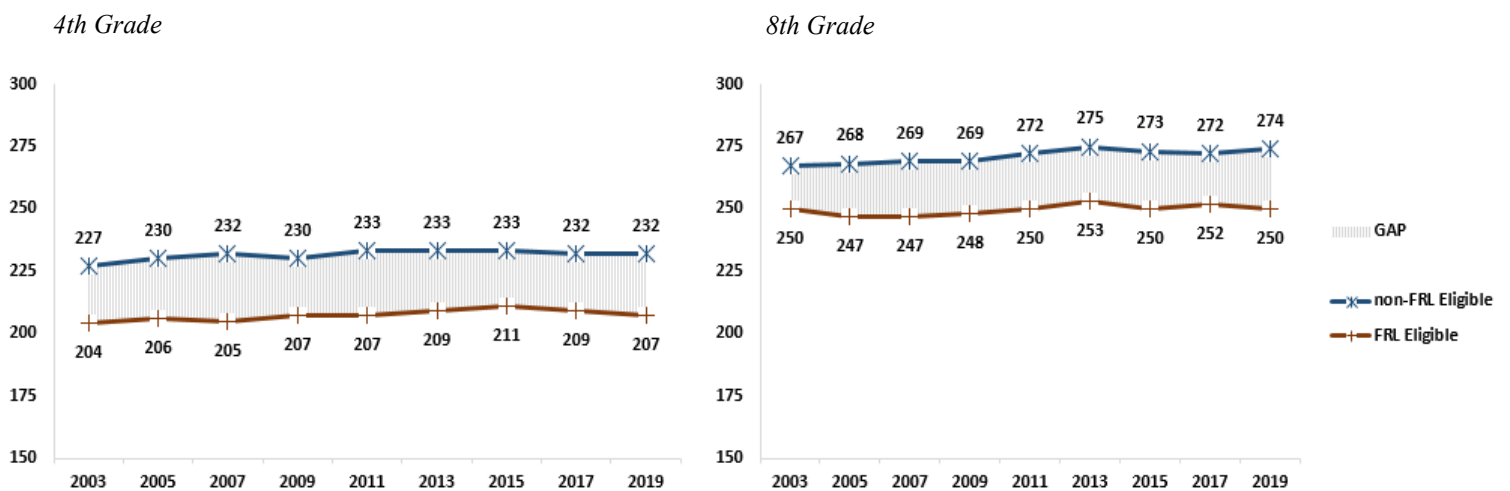


Figure 9 presents the NAEP Reading score gaps between students who are eligible for the federal Free/ Reduced Lunch Program and students who are not eligible. Eligibility for the program is determined by household income so this measure is often used as a proxy for poverty. The figure again includes students in 4th and 8th grade math from 2003 to 2019. 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 both 4th and 8th grade. In 2019 there is a 2 point increase in the gap among 4th graders, due to a decrease in performance among FRL eligible students. Among 8th graders however, the gap has widened due to a 2 point increase in performance among non-FRL eligible students paired with a 2 point decrease among FRL-eligible students.

Figure 9: Arkansas' NAEP Mean Scale Score for Reading, by Free/ Reduced Lunch Eligibility, 2003 to 2019



For more information about this Policy Brief and other education issues in Arkansas contact us:

Office for Education Policy
214 Grad Ed Building
Fayetteville, AR 72701
Phone: (479) 575-3773
Fax: (479) 575-3196
oep@uark.edu

Visit Our Blog:
www.officedpolicy.com

EXECUTIVE DIRECTOR :
Sarah C. McKenzie, Ph.D.

ASSISTANT DIRECTOR:
Joshua McGhee, Ph.D.

RESEARCH STAFF:
Charlene A. Reid

Why Aren't Scores Improving?

Arkansas is not alone in asking this question. Across the country NAEP scores have generally remained flat. It is concerning that our Math scores have been declining while our surrounding states have seen improvement. Other data, such as ACT Aspire scores and ACT performance of high school students have been similarly flat over the past several years.

NAEP and ACT Aspire

How do the NAEP results compare to student performance on the ACT Aspire? NAEP is taken by a sample of students in 4th and 8th grades throughout the state every other year, while the ACT Aspire is completed annually by all students in grades 3-10. Understanding how the results compare is important for Arkansas students because ACT Aspire is only comparable within the state, while NAEP is comparable across the country. Figure 10 presents the percentage of 4th and 8th graders scoring Proficient on the 2019 NAEP compared to the percentage of 4th and 8th graders meeting or exceeding expectations on the 2019 ACT Aspire.

Arkansas students are less likely to be proficient on the NAEP compared to the ACT Aspire. In Math, only 33% of 4th graders were proficient on NAEP, while 54% of 4th graders met Math standards on ACT Aspire. A similar discrepancy is present for 8th grade: 27% were proficient on the NAEP, while 48% met Math standards on ACT Aspire.

In Reading, 31% of 4th graders were proficient on NAEP, while 45% of 4th graders met ELA standards on ACT Aspire. Similarly, only 30% of 8th graders were proficient on the NAEP, while 53% met ELA standards on ACT Aspire. It is important to note that NAEP measures reading, while ACT scores represent English Language Arts which include reading, language, and writing performance.

Arkansas stakeholders should be aware that NAEP proficiency rates are 15-20% lower than the nationally-comparable NAEP proficiency rates. 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' 2019 NAEP Percent Proficient and ACT Aspire Percent Meeting Standards, by Grade and Content Area.

