



MISSOURI MAP RESULTS: 2024 EDITION

By Courtney Vahle, Ed.D.
November 2024
Volume 6, Issue 10



Please Cite As:

Vahle, C. (2024). Missouri MAP results: 2024 edition. PRiME Center. St. Louis University. <https://www.primecenter.org/policy-brief-database/map-2024>

Missouri MAP Results: 2024 Edition

Scores on the Missouri MAP test are effectively flat from 2023 to 2024. Math scores have mostly returned to pre-pandemic levels. ELA scores have yet to recover, especially at the early grades, which remain at 2021 levels. This reflects a larger trend of declining early literacy rates.

This brief is a PRiME Center rapid analysis, released the same day as the Missouri MAP score results.

Key Points

- In math, 2024's MAP scores surpassed or sustained 2023's scores in 4th–8th grades.
- Average 4th grade and middle school mathematics scores have completely “recovered” from pandemic-era lows, while 3rd and 5th grade scores remain, on average, five scale score points lower in 2024 than in 2018.
- All grades had math proficiency rates that increased or remained steady from 2023 to 2024. However, proficiency rates remain well below 50% in all grades as they have been since 2018.
- ELA scale scores are effectively unchanged from 2023–2024, and remain three to eight points lower than pre-pandemic levels. This Missouri data reflects more widespread national trends that show a decline in early literacy.
- Grades 4 and 7 saw slight improvement in ELA proficiency rates from 2023 to 2024. However, we see fewer than 50% of students scoring proficient or advanced in ELA in any grade, mirroring the mathematics proficiency rates. Only 38% of fifth and sixth-graders scored proficient or advanced on the ELA assessment.
- DESE has recently switched to reporting Direct Certification data in addition to information about the percentage of students receiving Free or Reduced-Price lunch. When used as a proxy measure for socioeconomic status, it allows us to provide extended and more accurate insights into the effects of socioeconomic status on student performance.
- Students who are eligible for Direct Certification are proficient at about half the rate of those ineligible across all grades and content areas.
- The socioeconomic proficiency gap remains steady, showing no signs of widening, but also no signs of closing.
- Studies continue to show that socioeconomic status is a significant predictor of school performance, and the gap between *FRL-ineligible* and *DC-ineligible* student performance indicates that it isn't an individual issue, but also a school-wide resource issue.

Table of Contents

Key Points	1
Table of Contents	2
What is MAP?	3
MAP Assessment Results	3
MAP Trends by Grade—Mathematics.....	5
MAP Trends by Grade—English Language Arts.....	7
MAP Trends by Socioeconomic Status.....	9
Free and Reduced-Price Lunch.....	9
Direct Certification.....	9
Trends by Socioeconomic Status.....	10
Conclusions	13
About the Author	14

What is MAP?

Each year, the state of Missouri uses Missouri Assessment Program (MAP) testing to gather data related to student achievement according to the Missouri Learning Standards at the student, class, school, district, and state levels. Missouri adopted MAP in 1993 in response to the Outstanding Schools Act, requiring statewide assessment systems. MAP has continued to evolve as part of the state’s accountability system and an effort to monitor performance nationally at the school level. Since No Child Left Behind was enacted in 2001, students in grades 3–8 have been assessed each April–May in Mathematics and English Language Arts (ELA). Students in grades 5 and 8 are also tested in Science. Since 2015, MAP testing has been administered online¹.

All students in grades 3–8 take three sessions of the ELA assessment, containing selected response and technology-enhanced items. Students in grades 4 and 8 complete a fourth ELA session containing passage-based items and a writing prompt. All students in grades 3–8 take three sessions of the math assessments. The first two math sessions contain selected response and technology-enhanced items, while the third is a performance event².

Selected-response items are those traditionally known as multiple-choice, where questions are followed by lists of possible answers, and students select the correct response(s). *Technology-enhanced items* utilize the virtual administration of the test in the presentation of or modes of responding to test items (for example, using audio stories or a drag-and-drop feature). *Performance events* require students to investigate real-world scenarios³.

MAP Assessment Results

The MAP assessment results are given as a scale score. The minimum and maximum scores in the range increase with each grade and are comparable across grades within the same subject area. In the table are score ranges for each grade level. To avoid skewing the data, students who score lower than the expected “guessing score” receive a predetermined Lowest Attainable Scale Score. Students who do not complete enough items for the test to assess their knowledge are assigned a score of LND (level not determined). Based on their scale score, students are assigned a Performance Level of Below Basic, Basic, Proficient, or Advanced, which describes their performance regarding the assessed skills and content⁴.

¹ <https://dese.mo.gov/quality-schools/assessment/guide-missouri-assessment-program>

² <https://dese.mo.gov/media/pdf/guide-missouri-assessment-program>

³ <https://dese.mo.gov/media/pdf/map-grade-level-assessment-spring-2023-guide-interpreting-results>

⁴ See 3 for a detailed description of the Performance Levels for each grade and subject.

TABLE 1

Scale Score Minimums and Maximums Increase with Grade Level and Have a Nonzero Floor
Scale Score Ranges for MAP Proficiency Levels by Grade and Subject

	ELA Scale Score Range				Math Scale Score Range			
3rd	160–560				185–520			
	BB	B	P	A	BB	B	P	A
	160–330	331–363	364–394	395–560	185–325	326–361	362–389	390–520
4th	170–570				210–540			
	BB	B	P	A	BB	B	P	A
	170–336	337–387	388–418	419–570	210–357	358–386	387–412	413–540
5th	210–600				250–570			
	BB	B	P	A	BB	B	P	A
	210–350	351–402	403–430	431–600	250–376	377–409	410–434	435–570
6th	230–620				260–580			
	BB	B	P	A	BB	B	P	A
	230–370	371–412	413–437	438–620	260–387	388–416	417–437	438–580
7th	240–630				270–600			
	BB	B	P	A	BB	B	P	A
	240–383	384–434	435–455	456–630	270–393	394–434	435–461	462–600
8th	250–650				310–660			
	BB	B	P	A	BB	B	P	A
	250–392	393–442	443–475	476–650	310–419	420–467	468–505	506–660

Notes: BB = Below Basic, B = Basic, P = Proficient, A = Advanced

MAP Trends by Grade—Mathematics

Average scale scores in Mathematics took a more significant hit than ELA scores over the course of the pandemic, although in 2021, both subjects hit a low across all grades. In 2024, we see 4th grade and middle school mathematics scores have completely “recovered” from pandemic-era lows, while 3rd and 5th grade scores remain, on average, five scale score points lower than 2018. All average scale scores for 2024 remain at the “basic” proficiency level, as they have for the past five years of recorded data.

Since 2023, we largely see a “leveling off” of scale scores, with middle schoolers’ scores increasing by one scale score point and 4th and 5th grade scores staying the same. However, third grade scores dropped by one point this year. Although not a significant drop, their overall performance has been slow to recover from an 11 point scale score dip due to the pandemic.

FIGURE 1

Average Math MAP Performance in 2024 Mostly Surpassed or Sustained 2023 Scores

Math MAP Scale Scores by Grade (3–8), 2018–2024

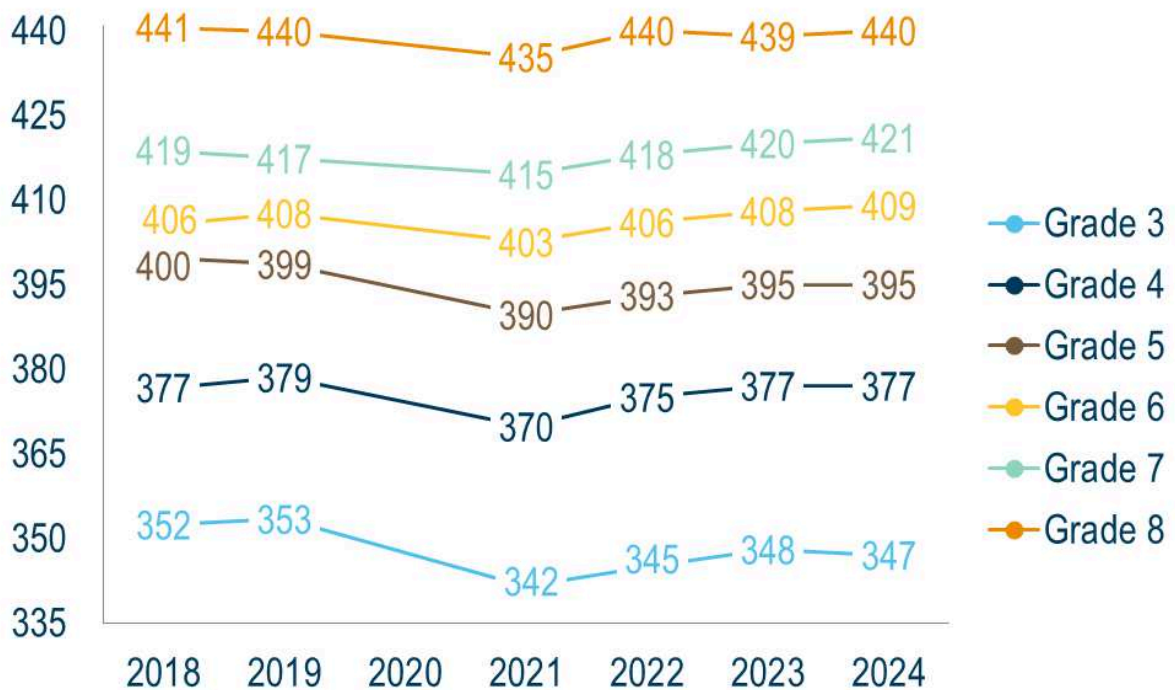
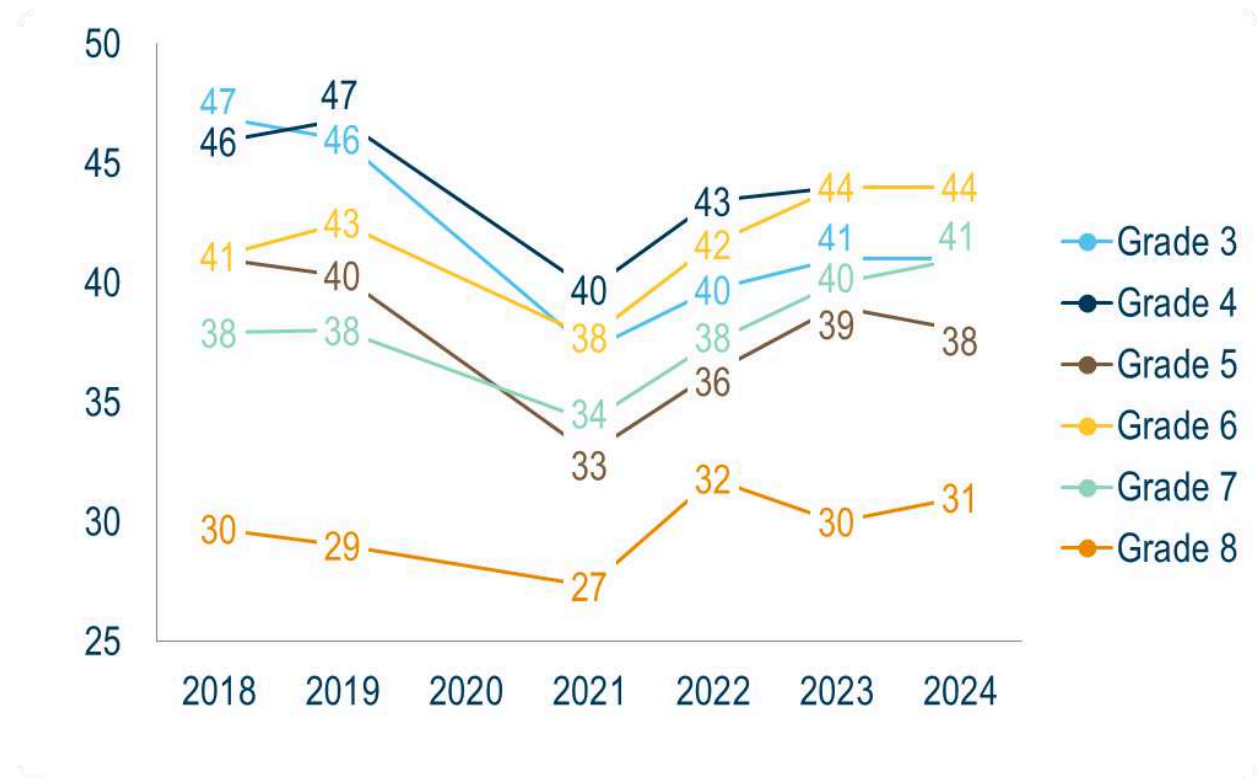


Figure 2 shows the percentage of students scoring proficient or advanced on the MAP math test by grade. The proficiency rates show a slightly more optimistic story for third graders, whose proficiency rate continues to increase. In fact, all grades had math proficiency rates that increased or remained steady from 2023 to 2024. However, all grades had proficiency rates that remain under 50%, as they have since 2018.

FIGURE 2

Math Proficiency Increasing or Remaining Steady in All Grades, Including 3rd

Percentage of Students Scoring Proficient or Advanced on Math MAP by Grade (3–8), 2018–2024



Note: Although 8th Grade proficiency rates appear significantly lower than grades three through seven, this difference is due to some 8th graders' participation in Algebra I. Many of these eighth graders take the Algebra I End of Course (EOC) examination rather than the math MAP test, and their scores are thus not included in this data. Since students who take Algebra I in middle school are those we may expect to have better mastery over math concepts, the proficiency rates reflect the exclusion of those students' data. DESE only provides the proficiency rate for all 8th-graders (whether or not they take the Algebra I EOC) in their preliminary results, not in the actual data releases.

MAP Trends by Grade—English Language Arts

During the pandemic, we saw less significant declines in ELA scores between 2019 and 2021. However, these scores have yet to rebound as the math scores have and remain, on average, three to eight scale score points lower than in 2019 across all grades. From 2023 to 2024, ELA scores have stagnated or fallen, with the exception of 7th grade. Average scale scores in all grades remain at the “basic” proficiency level, as they have since 2018.

Proficiency rates show a similar story, with grades 4 and 7 showing modest improvements from 2023 to 2024, but all grades still falling well below pre-pandemic levels. Across the board, we see fewer than 50% of students scoring proficient or advanced in ELA in each grade, mirroring the mathematics proficiency rates. Only 38% of fifth and sixth-graders scored proficient or advanced on the ELA assessment.

FIGURE 3

ELA Scale Scores Remain Lower than Pre-Pandemic Levels and Stagnated from 2023–2024

ELA MAP Scale Scores by Grade (3–8), 2018–2024

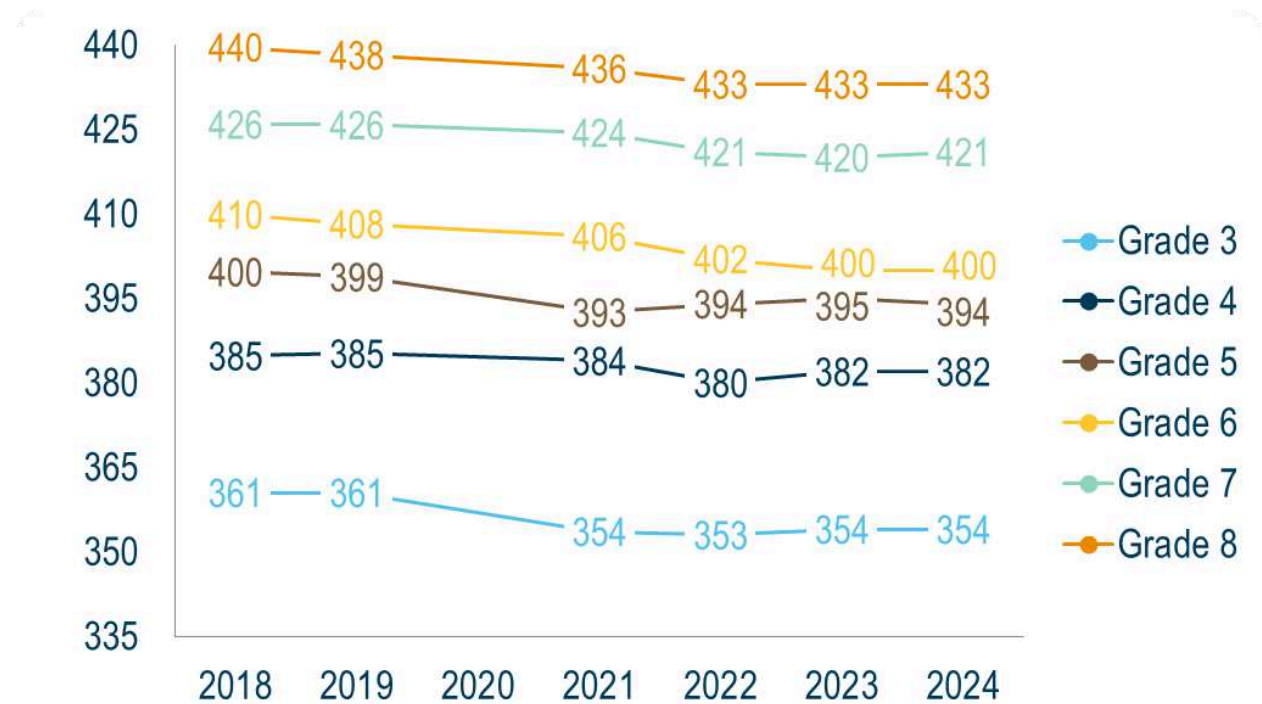
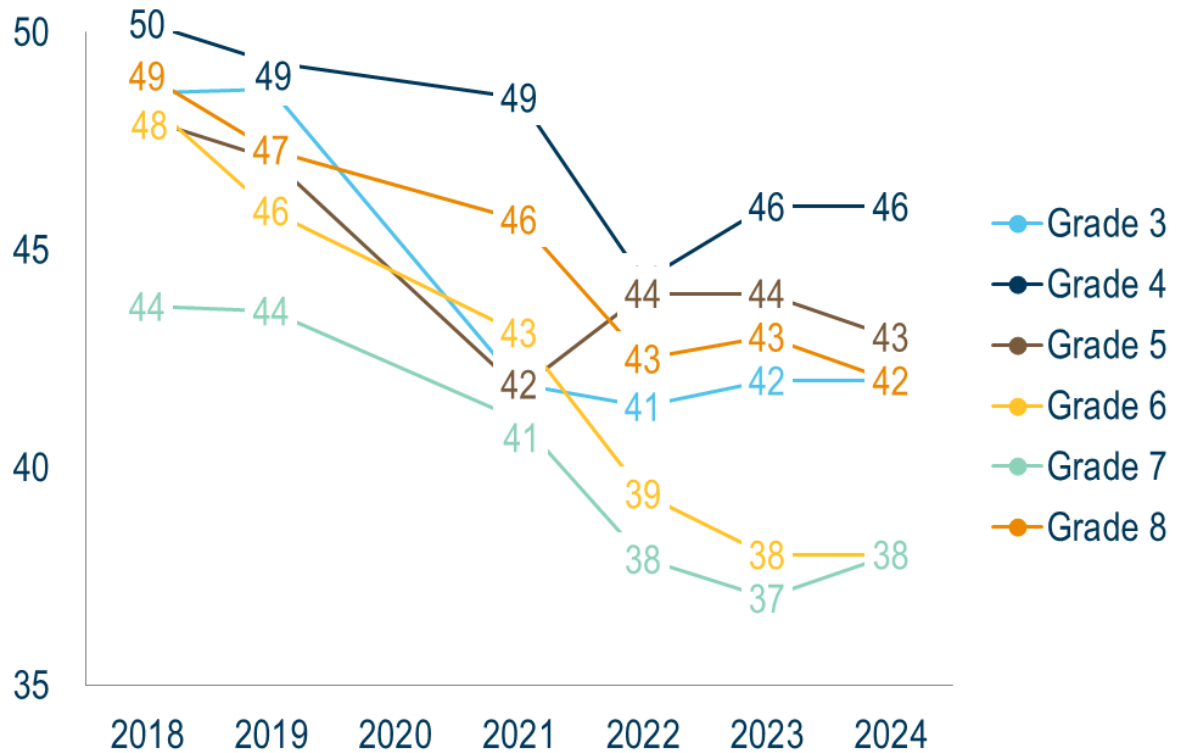


FIGURE 4

ELA Proficiency Rates Rise in Grades 4 and 7 From 2023–2024, Other Grades Remain Level

Percentage of Students Scoring Proficient or Advanced on ELA MAP by Grade (3–8), 2018–2024



Taken together, Figures 3 and 4 suggest a decrease in early literacy. Although no doubt exacerbated by the pandemic, the decline may have started before the pandemic. This trend has been covered by other media and education research outlets such as the New York Times⁵ and the National Center for Education Statistics (NCES)⁶. According to NCES data, literacy rates have been steadily declining since 2012. Missouri data seems to reflect this more widespread national trend.

⁵ <https://www.nytimes.com/2022/03/08/us/pandemic-schools-reading-crisis.html>

⁶ https://nces.ed.gov/nationsreportcard/blog/pandemic_performance_declines_across_racial_and_ethnic_groups.aspx

MAP Trends by Socioeconomic Status

The National School Lunch Program (NSLP) provides discounted or free meals to students whose household income meets federal requirements⁷. Eligibility for the program is a means to approximate students' socioeconomic status.

Free and Reduced-Price Lunch

Until recently, the percentage of students eligible for Free or Reduced-Price Lunch (FRL) at a school or district was used to approximate the average socioeconomic status of students at that school. The Community Eligibility Provision⁸ (CEP) allows schools to offer free or low-cost meals to *all students* if a certain percentage of the school's students qualify for the benefits through direct certification (such as eligibility for SNAP or TANF benefits) or other measures.

In 2023, the CEP Final Rule decreased the percentage from 40% to 25%, increasing student access to free or no-cost meals. This means that if at least one-quarter of students qualify for Free or Reduced-Price Lunch, then the school may offer FRL to all students, making a school's FRL percentage 100%.

For the purposes of understanding the impact of poverty on student achievement, using the FRL percentage of a given school can therefore be misleading as it can make it appear there are more students in a school living in poverty than there really are. Then, to better understand the impact of socioeconomic status on student achievement, we use a separate measure: Direct Certification (DC).

Direct Certification

In 2022, the Missouri Department of Elementary and Secondary Education (DESE) began reporting the percentage of students at a school who are Directly Certified, that is, eligible for the supplemental nutrition program through direct household measures such as qualification for SNAP or TANF benefits. This provides a better estimate of the socioeconomic status of students in a school since it is measured on an individual basis, not on the community meeting a minimum threshold of students in poverty and allows us to provide extended and more accurate insights into the effects of socioeconomic status on student performance.

Thus, on the following charts, we include proficiency rates for students eligible for FRL and for those Directly Certified. We have selected 4th and 8th grade scores as a sample, but the trends presented are

⁷ <https://www.fns.usda.gov/nslp>

⁸ <https://dese.mo.gov/financial-admin-services/food-nutrition-services/community-eligibility-provision-cep>

mirrored in all grades. Below, we use 4th and 8th grade scores to provide examples of the socioeconomic MAP score trends that are consistent across all grades and both Math and ELA content areas.

Trends by Socioeconomic Status

In each graph (Figures 5–8), we notice that the order of the five proficiency rate trend lines remains the same, with *FRL-ineligible* students maintaining the highest proficiency rates, followed by the *DC-ineligible* students, both of which fall above the average trend line. Under the average trend line, we see the *FRL-eligible* students and *DC-eligible* students respectively.

DC-eligible students are the most economically disadvantaged group as their families directly qualify for the supplemental nutrition program through income requirements or other measures. Across all grades and subjects, students eligible for Direct Certification have proficiency rates that hover around the low 20s across the state. For each grade and subject, the *DC-ineligible* students' proficiency is about double that of the *DC-eligible* students and hovers around the low 50s. For example, on the 2024 4th Grade ELA MAP test (Figure 6), 53 percent of *DC-ineligible* students scored proficient or advanced while only 27 percent of *DC-eligible* students.

FRL-ineligible students are the most (relatively) economically advantaged group as their families do *not* qualify for benefits through income measures *and* they do *not* attend a school eligible for FRL through the CEP. Thus, these students are not only financially better off individually, but also as a group as they attend schools in areas that are more economically advantaged overall and these students are likely to benefit from those extra resources. This advantage is reflected in the percentage of *FRL-ineligible* students scoring proficient or advanced, hovering around the upper 50s. On average, proficiency rates for this group are about 2.5 times higher than that of *DC-eligible* students on any grade and subject area. For example, Figure 5 shows that on the 2024 4th Grade Math MAP test, 24 percent of *DC-eligible* students scored proficient or advanced while 60% of *FRL-ineligible* students scored proficient or advanced.

The gap between the *DC-eligible* and *DC-ineligible* groups has remained relatively consistent over the period measured. The gap isn't getting worse, but it isn't getting better either. These proficiency rate differences highlight the resource gap that persists. Studies continue to show that socioeconomic status is a significant predictor of school performance⁹, and the gap between *FRL-ineligible* and *DC-ineligible* student performance indicates that it isn't an individual issue, but also a school-wide resource issue.

⁹ <https://www.epi.org/publication/education-inequalities-at-the-school-starting-gate/>

FIGURE 5

24% of Directly Certified Students Scored Proficient/Advanced Compared to 60% of FRL-Ineligible

Percentage of Students Scoring Proficient or Advanced on 4th Grade Math MAP, 2018–2024

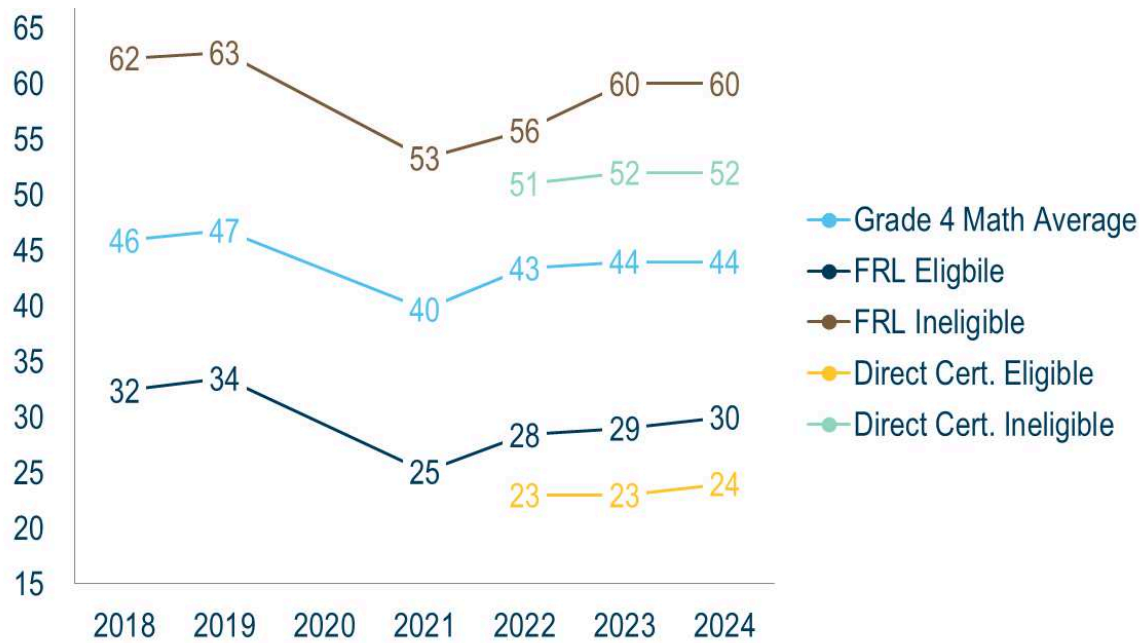


FIGURE 6

27% of Directly Certified Students Scored Proficient/Advanced Compared to 53% of DC-Ineligible

Percentage of Students Scoring Proficient or Advanced on 4th Grade ELA MAP, 2018–2024

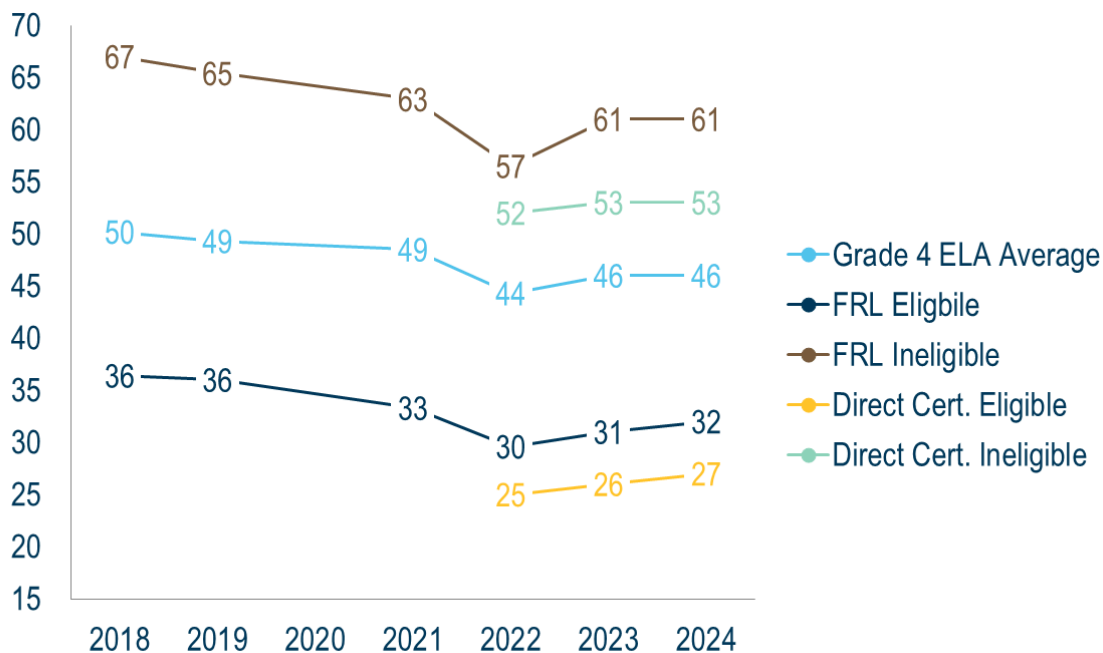
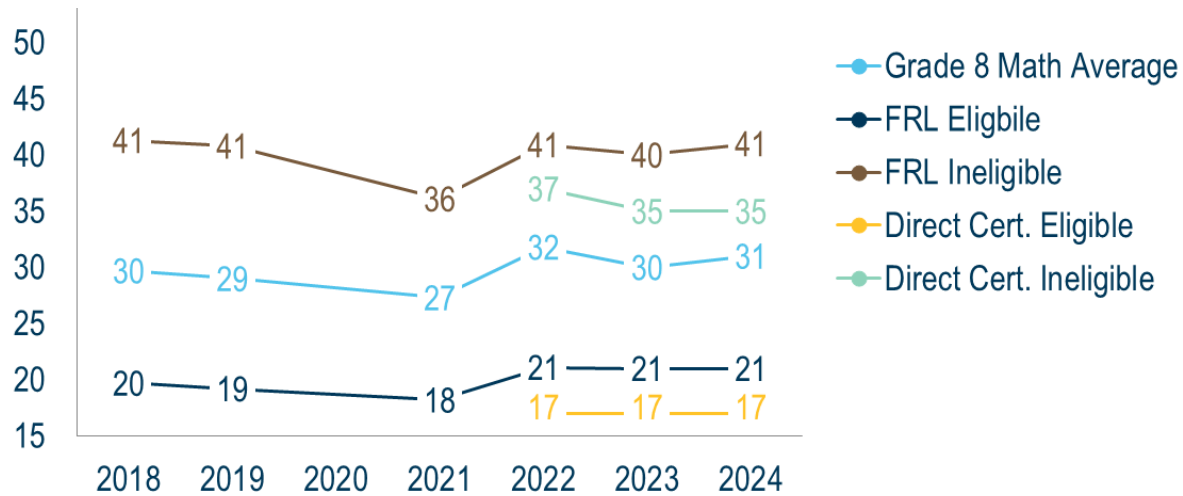


FIGURE 7

8th Grade Math MAP Proficiency Rates Remain Low Due to Exclusion of Algebra I Students

Percentage of Students Scoring Proficient or Advanced on 8th Grade Math MAP, 2018–2024

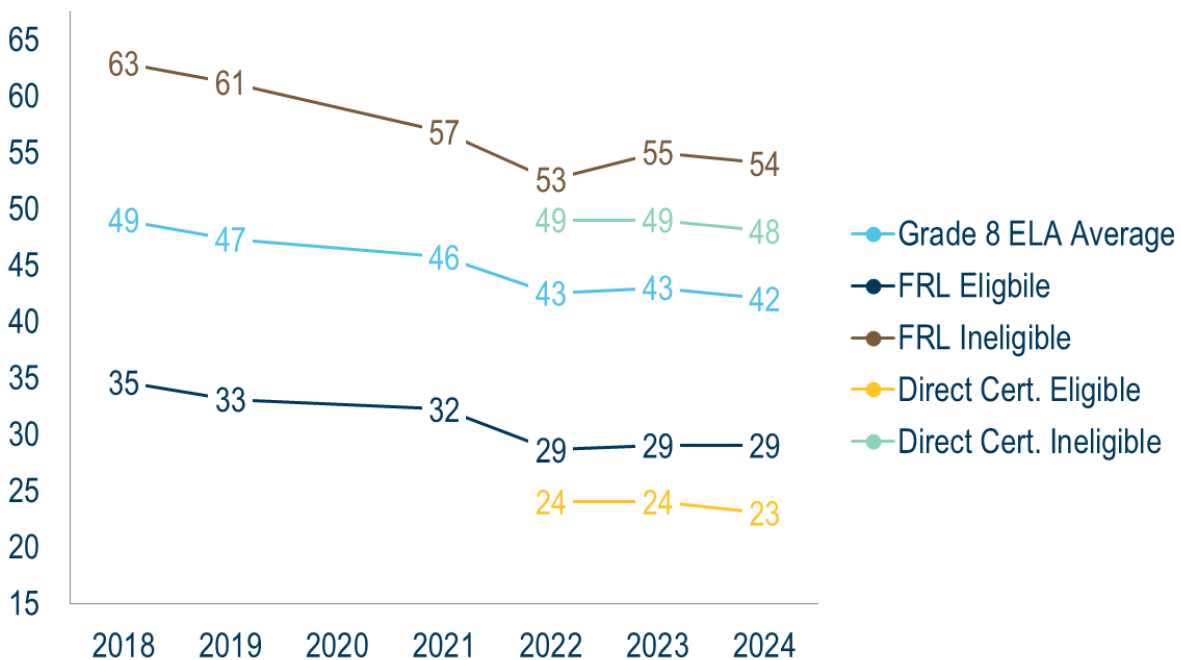


As previously indicated, these rates reflect only the 8th grade students who do NOT take the Algebra I EOC. DESE only provides the proficiency rate for all 8th-graders (whether or not they take the Algebra I EOC in their preliminary data releases and does not provide this data broken down by subcategory.

FIGURE 8

8th Grade ELA Proficiency Falls Across Most Socioeconomic Groups in 2024

Percentage of Students Scoring Proficient or Advanced on 8th Grade ELA MAP, 2018–2024



Conclusions

The results of standardized tests such as the MAP continue to inform decision making at the school, district, state, and national levels. Even if year-to-year variation can seem misleading, using data over time and together with other sources—as done in this report—we can identify important trends in Missouri students’ achievement.

These results can help us understand on a large scale how Missouri students are doing post-pandemic. In order to compare across grades and subjects on a similar scale, we can calculate the change in terms of a standard deviation. Table 2 helps us see that the most significant math declines from 2019 to 2024 have taken place in 3rd grade. Although 3rd and 5th grade scores both remain five scale score points lower than pre-pandemic, the analysis in terms of standard deviations shows that the impact on third graders is worse.

Comparatively, we again see that ELA scores have taken a more significant hit overall, but most especially in 6th grade, where scores fell more than $\frac{1}{2}$ of a standard deviation. This decline is mirrored in the measure of proficiency rates—only 38% of fifth and sixth-graders scored proficient or advanced on the ELA assessment.

TABLE 2

Score Changes in Terms of Standard Deviations Show Largest Declines in 3rd Grade Math and 6th Grade ELA

Score Change as Fractions of a 2019 Standard Deviation From 2019 (Pre-Pandemic) to 2024 (Current)

Grade	Subject	Change in SDs from 2019–2024	Grade	Subject	Change in SDs from 2019–2024
3	Math	-0.1328	3	ELA	-0.1607
4	Math	-0.0254	4	ELA	-0.0848
5	Math	-0.0851	5	ELA	-0.1176
6	Math	+0.0263	6	ELA	-0.2158
7	Math	+0.0820	7	ELA	-0.1219
8	Math	-0.0043	8	ELA	-0.1384

MAP scores help us understand how our students are aligning (or not) with more national trends. From this 2024 analysis, we see a Missouri-wide decline in ELA scores and proficiency rates across all grades, aligning with a more widespread phenomena of declining literacy rates that has been occurring since at

least 2012. Additionally, although math scores have effectively “bounced back” to post-pandemic levels in most grades, 2024 proficiency rates remain below 50% across all grades and subjects.

Although these tests cannot show us the entire picture, using test scores to complement other data points such as attendance, mobility, and graduation rates can help stakeholders make informed decisions. Our research emphasizes that the post-pandemic reading decline is significant and should be a focus for all stakeholders, most especially for students and schools in low-income areas.

About the Author

Courtney Vahle, Ed.D. is the Director of Operations at the PRiME Center.