

Key Takeaways About the NAEP 2024 Interest/Enjoyment in Mathematics Index

- The NAEP interest/enjoyment in mathematics index is positively associated with scores; the higher the reported level of interest/enjoyment, the higher the average math score
- Oregon 4th and 8th graders report lower levels of interest/enjoyment in mathematics than their peers nationally
- Between 2019 and 2024, Oregon 4th and 8th graders' reported levels of interest/enjoyment decreased
- Compared to students across the nation with the same levels of interest/enjoyment, Oregon 8th graders perform similarly in mathematics, which suggests that, at grade 8, strategies to boost interest/enjoyment in math could successfully lift the overall Oregon average score to the national average
- On the other hand, even Oregon 4th graders with high levels of interest/enjoyment in mathematics scored lower than their national peers with the same levels of interest/enjoyment, suggesting that 4th grade needs significant attention: increasing interest and enjoyment is critical and must be coupled with additional strategies to increase achievement
- Other strategies likely to support raising Oregon's average NAEP math scores include implementation of [High-Quality Instructional Materials](#); effective [formative instructional practices](#); and [transformative social and emotional learning practices specific to mathematics](#)

Introduction

Representative samples of 4th and 8th graders from public schools in every state participated in the 2024 National Assessment of Educational Progress (NAEP). NAEP 2024 included math and reading assessments and surveys of students, teachers, and school administrators. The full NAEP 2024 report is online at www.nationsreportcard.gov. All survey questions administered for NAEP 2024 can be viewed [online](#). Complete data from the surveys is available through the [NAEP Data Explorer](#). Released math and reading items, along with answer keys, scoring rubrics, and sample student responses, can be found in the [NAEP Questions Tool](#).

NAEP 2024 Overall Mathematics Results

The results from NAEP 2024 show that Oregon students at both grade 4 and grade 8 had lower average scores than their peers nationally, although the difference was smaller at grade 8 than grade 4. The average score for Oregon 4th graders was 229, compared to 237 for 4th graders nationally. At grade 8, Oregon students had an average score of 268 compared to 272 for students nationally.

NAEP Survey Data

NAEP student survey questions are designed to provide insight on factors that affect student achievement, such as students’ experiences inside and outside of class and their engagement in school. Several NAEP 2024 survey questions form the basis for policy-relevant reporting indices including an interest and enjoyment in mathematics index.

The interest/enjoyment in mathematics index is based on six survey questions listed in Appendix Table A1 that were administered to both 4th and 8th graders. Figures 1 and 2 and Appendix Table A2 illustrate that Oregon had higher percentages of 4th graders and 8th graders reporting low interest/enjoyment in math and lower percentages reporting high interest/enjoyment than the US as a whole. Figure 2 and Appendix Table A2 also show that 8th graders in both the US and Oregon reported lower levels of interest/enjoyment in mathematics than 4th graders.

Figure 1: Oregon 4th Less Likely to Report High Interest/Enjoyment in Mathematics Than U.S. Peers, More Likely to Report Moderate or Low Interest/Enjoyment

NAEP 2024, Grade 4 Student Survey, Interest/Enjoyment in Mathematics Index Response Percentages

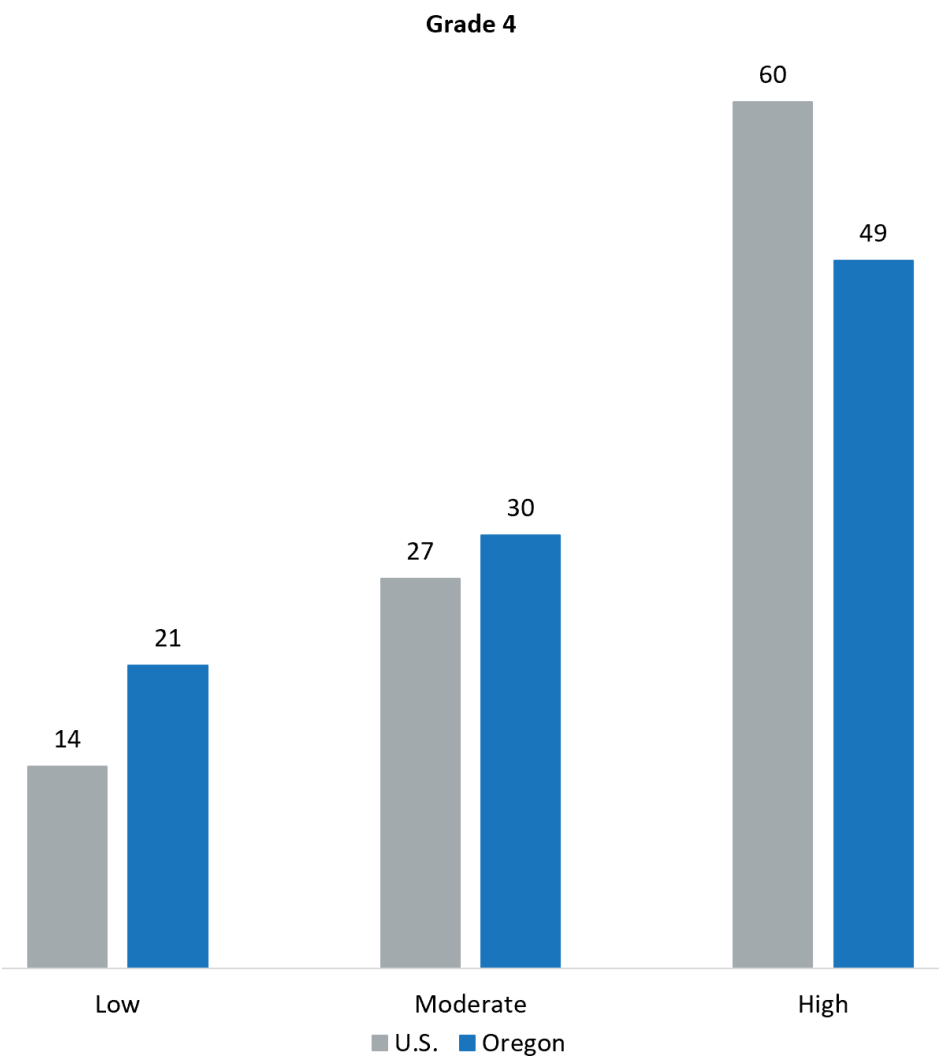
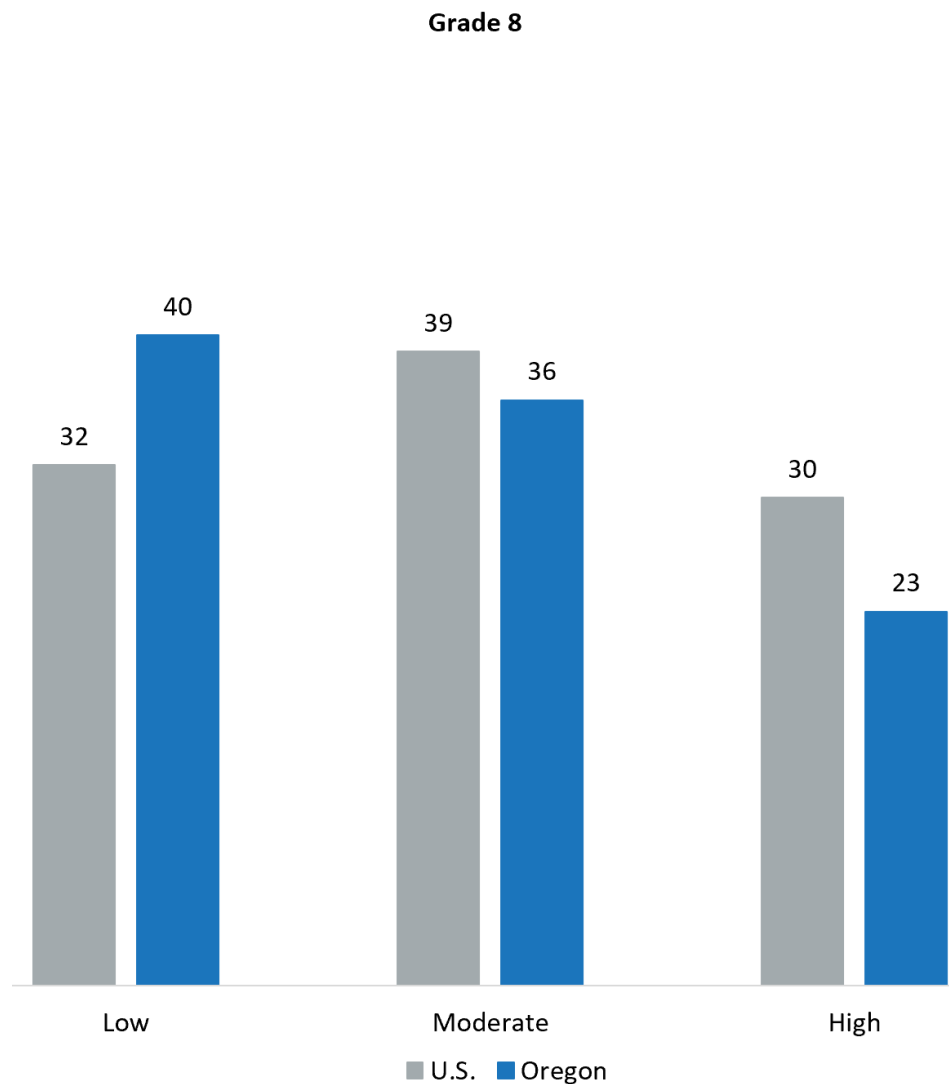


Figure 2: Oregon 8th Less Likely to Report High or Moderate Interest/Enjoyment in Mathematics Than U.S. Peers, More Likely to Report Low Interest/Enjoyment

NAEP 2024, Grade 8 Student Survey, Interest/Enjoyment in Mathematics Index Response Percentages



Figures 3 and 4 and Appendix Table A2 show that, for both Oregon and the U.S., average math scores at grade 4 and grade 8 were positively associated with reported levels of interest/enjoyment; the higher the level of interest/enjoyment, the higher the average score.

Figure 3: NAEP Grade 4 Interest/Enjoyment in Mathematics Index Positively Associated with Scores

NAEP 2024, Grade 4 Student Survey, Interest/Enjoyment in Mathematics Index Scores by Response Category

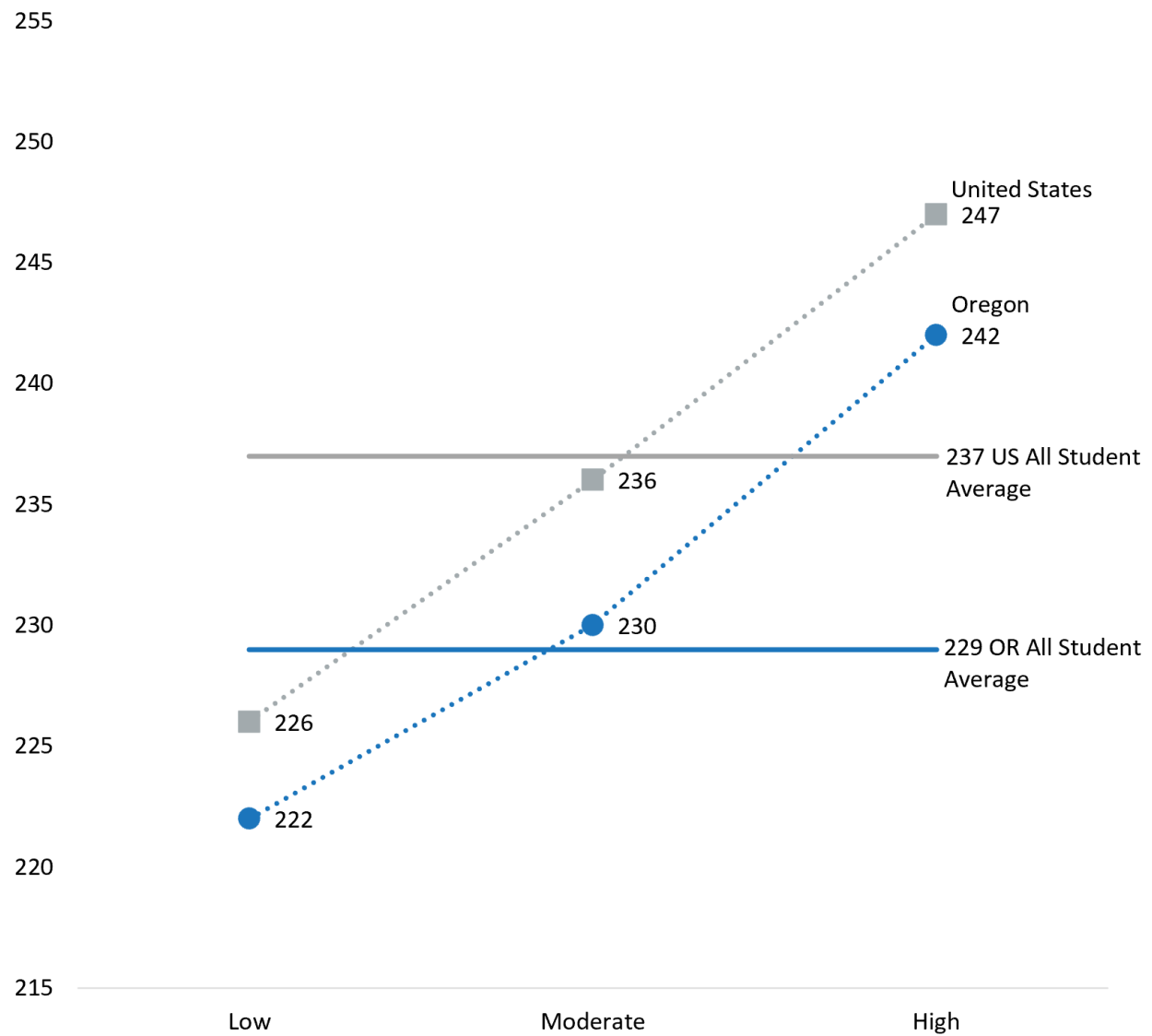
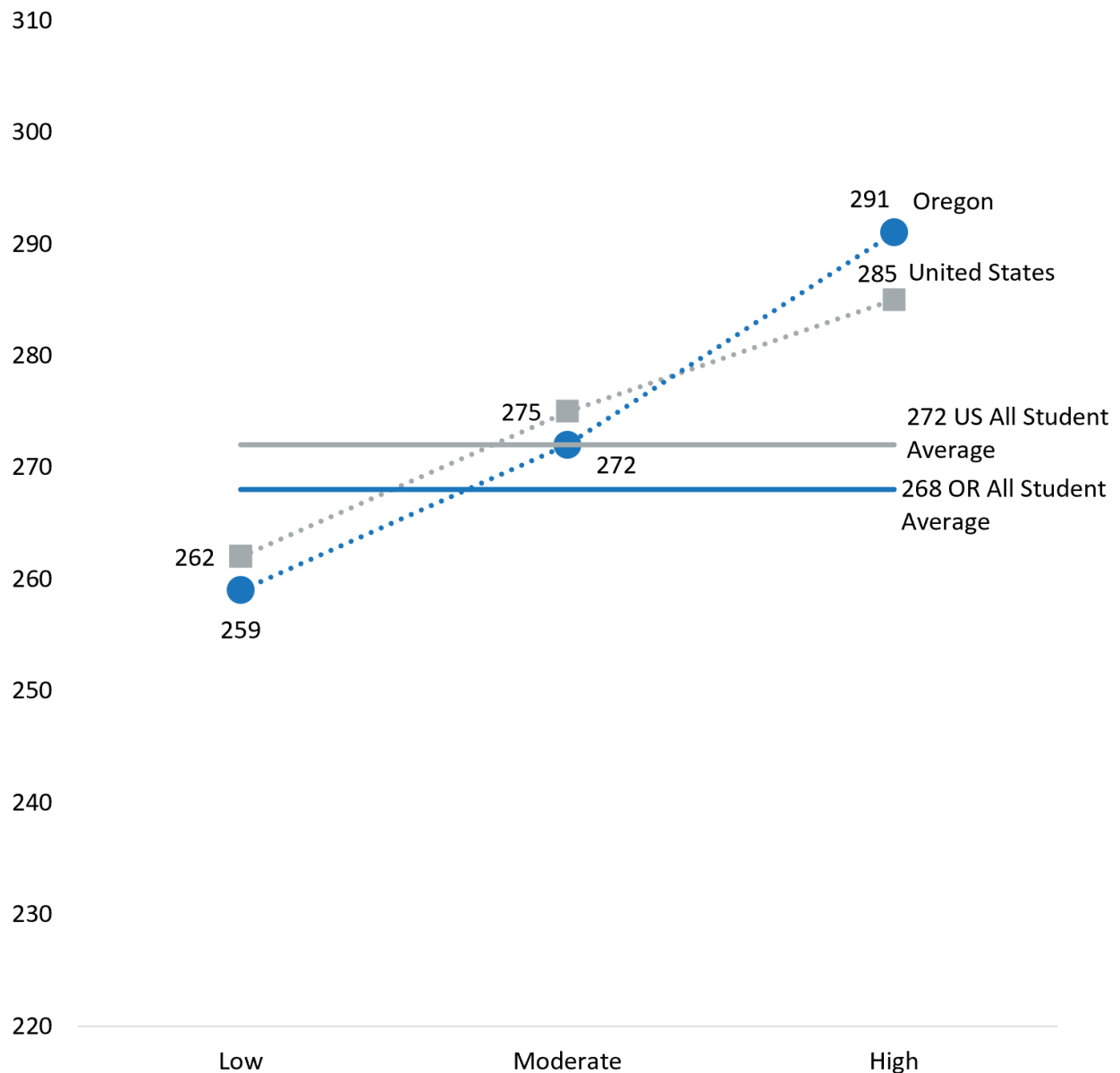


Figure 4: NAEP Grade 8 Interest/Enjoyment in Mathematics Index Positively Associated with Scores

NAEP 2024, Grade 8 Student Survey, Interest/Enjoyment in Mathematics Index Scores by Response Category



Math average scores for Oregon 4th graders reporting moderate or high levels of interest/enjoyment in math were lower than scores for their peers in U.S. public schools, while the difference in scores for students reporting a low level was not statistically significant. For 8th graders, there were no statistically significant differences in scores between Oregon and the U.S. for any response category, but the difference in scores overall was significant, suggesting that the overall score difference is driven in part by Oregon students being more likely to report low levels of interest/enjoyment in math.

Between NAEP 2019 and NAEP 2024, the percentage of Oregon 4th graders reporting low interest/enjoyment in math rose from 18% to 21%, with a statistically significant decrease in the percentage reporting that the statement “I think math will help me even when I am not in school” is “Exactly like me.” The percentage of Oregon 8th graders reporting low interest/enjoyment in math rose from 35% to 40%. There were statistically significant declines in the percentages of students selecting “Exactly like me” for each item that makes up the index, as listed in Appendix Table A1.

The statistically significant score differences between Oregon 4th graders and their peers nationally suggest that interest and enjoyment in math are important considerations for improving outcomes in our state at this grade level. However, differences do not fully explain Oregon's overall performance, which is 9 points lower than the national average. This pattern suggests that efforts to increase student engagement are important and should be accompanied by broader achievement-focused strategies. Research from the Oregon Department of Education using data from grade 4 has identified [formative instructional practices that positively influence](#) student self-efficacy and math achievement. The implementation of High-Quality Instructional Materials [is another practice linked to improvements in mathematics achievement](#).

8th graders in Oregon at each interest/enjoyment index level statistically match the scores of their peers nationally. However, a higher percentage of Oregon 8th graders report low interest/enjoyment and lower percentages report moderate or high interest/enjoyment than nationally. This pattern suggests that the overall 4-point difference in performance between Oregon and the U.S. at grade 8 could be effectively improved by strategies that boost Oregon students into higher levels of interest/enjoyment. The [Oregon Math Project](#) and the [Transformative Social and Emotional Learning in Mathematics Teacher's Guide](#) have emphasized the importance of practices to encourage engagement and belonging to support students in attaining mathematics proficiency. [Research](#) based on the Oregon Student Educational Equity Development (SEED) survey and statewide assessments documents a positive correlation between the SEED Sense of Belonging domain score and grade 8 mathematics achievement.

Appendix

Table A1. Survey items in the index of interest/enjoyment in mathematics: How much does each of the following statements describe you? The response options: Not at all like me, A little bit like me, Somewhat like me, Quite a bit like me, or Exactly like me.

I enjoy doing math.

I look forward to my math class.

I am interested in the things I learn in math.

I think making an effort in math is worthwhile.

I think math will help me even when I am not in school.

I think it is important to do well in math.

Table A2. NAEP 2024 Interest/Enjoyment in Mathematics Index Percentages and Average Scores

Grade	Jurisdiction	Low Percentage	Low Average Score	Moderate Percentage	Moderate Average Score	High Percentage	High Average Score
4	US	14	226	27	236	60	247
4	OR	21	222	30	230	49	242
8	US	32	262	39	275	30	285
8	OR	40	259	36	272	23	291

Data Source: NAEP 2024 Mathematics Assessment, NAEP Data Explorer,
<https://nces.ed.gov/nationsreportcard/data/>