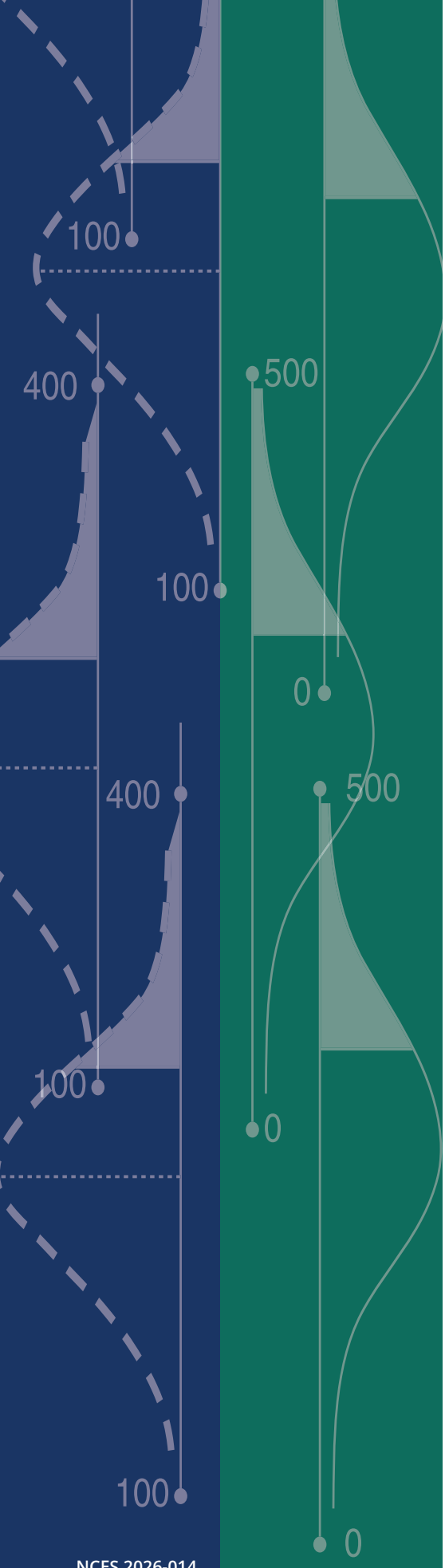

IES Institute of Education Sciences

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Results From the 2022 NAEP Reading and Mathematics Assessments

NAEP
NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS

NCES 2026-014
U.S. DEPARTMENT OF EDUCATION

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FEBRUARY 2026

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U.S. DEPARTMENT OF EDUCATION

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What is NAEP?

The National Assessment of Educational Progress (NAEP), also known as The Nation's Report Card™, is an assessment program conducted by the National Center for Education Statistics (NCES) to inform the public of what elementary and secondary students in the United States know and can do in various subject areas, including reading, mathematics, and science.

Since 1969, NAEP has been a common measure of student achievement across the country. The NAEP program includes long-term trend NAEP and main NAEP. The long-term trend NAEP monitors trends and reports student performance based on nationally representative samples of 9-, 13-, and 17-year-olds. The main NAEP reflects current educational content and assessment methodology and measures performance of students in grades 4, 8, and 12 at the national level. The main NAEP also reports results of grades 4 and 8 reading and mathematics for participating states and selected large urban school districts.

Additional information about main NAEP is available at https://nces.ed.gov/nationsreportcard/.

An Overview of the Study

NCES has periodically published reports using results from NAEP to compare the proficiency standards that states set for their students. Since standards vary across states, the results of the various state assessments cannot be used to directly compare students' progress. However, by placing a state standard onto the NAEP scale, a common metric for all states, a NAEP equivalent score of that standard is produced, which can be compared across states. The last mapping study report released by NCES (NCES 2021-036) compared state proficiency standards for school year 2018–19.

This report highlights the results of mapping state proficiency standards onto the NAEP scales using state assessment results from the 2021–22 school year and the 2022 NAEP assessments for public schools. The study focuses on the reading and mathematics standards that states set for grades 4 and 8. For each state, the report displays the NAEP equivalent scores with a range of 0–500. The NAEP equivalent scores are shown with respect to the NAEP achievement levels: *NAEP Basic* and *NAEP Proficient*.

As is typical in NAEP reporting, 2022 results are compared with 2019 results to show more recent changes and with 2013 results to show longer-term change.

The analyses conducted for this edition of the study address the following questions:

- What are the 2022 NAEP equivalent scores for the states?
- How do the 2022 NAEP equivalent scores compare with those from 2019 and 2013?

Overall, in 2022, state standards for proficient performance mapped at the *NAEP Basic* achievement level for most states in both grades and subjects. In addition, for states with all 3 years of data, the differences between the highest and lowest NAEP equivalent scores of the state standards were larger in 2022 compared to 2019 in grade 4 reading and grade 8 mathematics, and smaller in grade 4 mathematics. In all assessments except grade 8 mathematics, the differences were smaller in 2022 than in 2013.

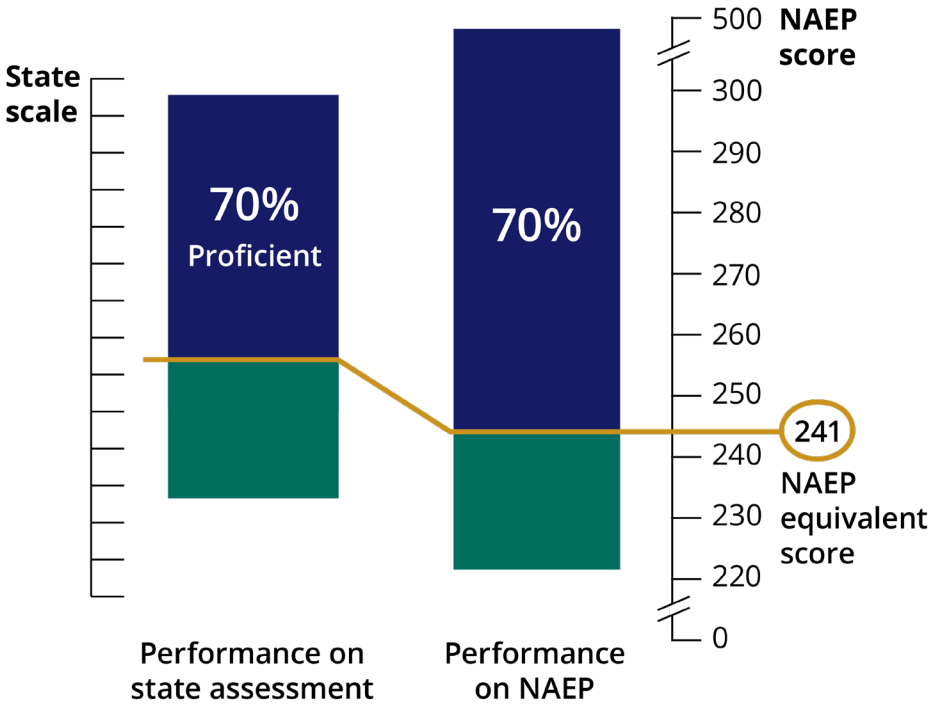
The mapping study has contributed to the discussion on achievement standards for the nation's students since 2003. The study is intended to help readers understand the myriad state assessment results that are otherwise difficult to compare and to serve a policy need for reliable information that compares state standards. The study is not an evaluation of the various state assessments or of the quality of the states' achievement standards, and the findings should not be interpreted as evidence of deficiencies in state assessments or in NAEP. It should be noted that state assessments and NAEP may vary in format and administration because they have different goals and are developed for different purposes. The mapping of the state standards for proficient performance does not imply that the NAEP achievement levels are more valid than the state standards or that states should emulate NAEP standards. A wide range of policy considerations are involved in setting achievement standards, and what is appropriate for NAEP may not be the best fit for a given state. Please see the 2013 report (NCES 2015-046) for a more complete discussion of the study's limitations. NAEP's achievement levels are used in this study to aid in the interpretation of NAEP equivalent scores. As provided by law, NAEP achievement levels are to be used on a trial basis and should be interpreted with caution.[1]

[1] For more information on the NAEP achievement levels and their trial status, see https://nces.ed.gov/nationsreportcard/guides/scores_achv.aspx.

Mapping State Standards Onto the NAEP Scales

This mapping report displays the NAEP equivalent score for each state, which is the placement of state standards for proficient performance in reading and mathematics onto the 0–500 NAEP scale. **Exhibit 1** illustrates the process for estimating a NAEP equivalent score. The bar on the left shows performance on the state assessment for a given grade and subject, where 70 percent of students in the state met the state standard for proficiency. The bar on the right shows performance on NAEP. It shows that the top 70 percent of students in that state performed at or above the NAEP score of 241. The score 241 is the estimated NAEP score equivalent to the state standard for proficient performance.

Exhibit 1. Illustration of mapping to NAEP



While some states implemented their own assessment programs, other states participated in the Smarter Balanced Assessment Consortium (SBAC; see **table 2**). For those states, NAEP equivalent scores were estimated in two ways. First, the NAEP equivalent scores were estimated for SBAC as a whole by considering the participating states as one single jurisdiction. The figures in the main report show these estimates. Second, the NAEP equivalent scores were estimated for each state individually, and these estimates are found in **tables A-1** and **A-2** in the **Technical Notes** available at https://nces.ed.gov/nationsreportcard/subject/publications/studies/pdf/2026014a.pdf. The Technical Notes (NCES 2026-014-A) also provide additional details on the mapping methodology.

Data Sources

The analyses in this report are based on NAEP and state assessment results for public schools that participated in the grades 4 and 8 NAEP assessments in reading and mathematics, weighted to represent the state's public school students. The analyses used data from (a) NAEP data files for the states (including the District of Columbia and Puerto Rico,[2] which are referred to as states in this report) that participated in the 2022 assessments and (b) state assessment 2021–22 school-level achievement data from ED*Facts* and, in some cases, directly from the states. In addition, this report includes results from earlier mapping studies in 2013 (NCES 2015-046) and 2019 (NCES 2021-036) to make comparisons with 2022 results.

Data availability

For 2022, Maine was not included in the study because the state administered an interim assessment in 2021–22. Puerto Rico was not included for grades 4 and 8 reading because the NAEP reading assessments were not administered in the jurisdiction.

Furthermore, some states were not included in the analyses for grade 8 because of differences in the population and content assessed by NAEP and the state assessments. In 2013, 2019, and 2022, some states did not require all grade 8 students to take the state's general, end-of-grade assessments. For example, some students took an end-of-course assessment in advanced English language arts, algebra I, or geometry in place of the end-of-grade reading or mathematics assessment. For some of these states, state assessment data files contained the combined results of both end-of-grade and end-of-course tests. These states were not included if less than 95 percent of students took the end-of-grade test, because of the relatively large percentage of end-of-course test results that would be included in the analysis and the substantial content differences between end-of-course and NAEP assessments.

The remaining states that administered end-of-course tests had state assessment data containing only end-of-grade test results. These states were included, but those with less than 95 percent of students taking the end-of-grade test are identified in the notes for each set of results. Results for these states should be interpreted with caution, as their relatively low end-of-grade assessment participation may have led to differences in the populations assessed by the state test and NAEP.

To determine if the mapping was appropriate, NCES surveyed the states on their assessment practices after each NAEP administration and followed up with each state to resolve unexplained discrepancies identified during the data review process. **Table 1** lists the states not included in the analyses. Note that not being able to map these states onto the NAEP scale does not suggest a problem with the quality of the state assessment or performance standard; rather, it indicates that these state standards could not be meaningfully mapped onto the NAEP scale.

[2] Mathematics only. In Puerto Rico, NAEP mathematics assessments are translated into Spanish.

Data Sources—Continued

Table 1. States that were not included in the mapping study, by grade and subject: 2022

Subject	Grade 4	Grade 8
Reading	Maine, Puerto Rico (2 states)	Maine, Puerto Rico (2 states)
Mathematics	Maine (1 state)	District of Columbia, Florida, Louisiana, Maine, Maryland, New Jersey, North Carolina, New York, Ohio, Tennessee, Texas, and Virginia (12 states)

NOTE: All jurisdictions, including the District of Columbia and Puerto Rico, are collectively referred to as states in this report. Maine was not included because the state administered an interim assessment in 2021–22. Puerto Rico was not included for grades 4 and 8 reading because the NAEP reading assessments were not administered in the jurisdiction. The remaining states were not included because their assessment data files had end-of-grade assessment results mixed with other assessment results, and the student participation rate for the end-of-assessment.

SOURCE: State education agencies.

Testing programs

Each state determines the assessment to measure its students' progress in relation to the standards it sets. Information about the state assessment program is confirmed by the NAEP State Coordinators. Eleven states used the SBAC testing program in 2022. As noted in the section Mapping State Standards Onto the NAEP Scales, for states that used SBAC assessments, the mapping results are reported for SBAC as a whole within this report and for the individual states in **tables A-1** and **A-2** in the **Technical Notes** available at https://nces.ed.gov/nationsreportcard/subject/publications/studies/pdf/2026014a.pdf. **Table 2** lists the states that participated in the SBAC testing program in 2022.

Table 2. States and their testing program: 2022

Testing program	States
Smarter Balanced Assessment Consortium (SBAC)	California, Connecticut[1], Delaware, Idaho, Montana[1], Nevada, Oregon[1], South Dakota, Vermont, and Washington (10 states)
Individual state program	Alabama, Alaska, Arizona, Arkansas, Colorado, District of Columbia, Florida, Georgia, Hawaii, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Nebraska, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, Puerto Rico, Rhode Island, South Carolina, Tennessee, Texas, Utah, Virginia, West Virginia, Wisconsin, and Wyoming (41 states)

[1] Connecticut, Montana, and Oregon were not included in estimating the SBAC reading standard because these states either did not use all SBAC reading assessment components or used a custom blueprint for their reading assessment.
NOTE: All jurisdictions, including the District of Columbia and Puerto Rico, are collectively referred to as states in this report. Maine was not included in the study because the state administered an interim assessment in 2021–22.
SOURCE: State education agencies.

Note that states using the same assessment and achievement standard may have different NAEP equivalent score estimates, and estimates may change from year to year in states that did not change their assessments or standards. These differences may occur for various reasons, such as curricular and teaching differences that affect what students learn; random variation in student and item sampling; and differences between NAEP and state assessments in the content and skills assessed. For more information, please see the **Technical Notes** (NCES 2026-014-A).

Interpreting the Results

For each grade (4 and 8) and subject (reading and mathematics), there are three sets of results with an accompanying figure:

- Figures 1, 4, 7, and 10 show the estimates of the 2022 NAEP equivalent score for proficient performance on a state standard for each state. States are displayed in ascending order based on their NAEP equivalent score (i.e., from lowest to highest). States participating in SBAC are shown in alphabetical order.
- Figures 2, 5, 8, and 11 describe the number of states whose standards for proficient performance can be classified into each range of the NAEP achievement levels (below *NAEP Basic*, *NAEP Basic*, and *NAEP Proficient*) for 2013, 2019, and 2022.
- Figures 3, 6, 9, and 12 present the range between the highest and lowest NAEP equivalent scores of state standards for proficient performance in 2013, 2019, and 2022.

Only states with all 3 years of data are included in the multi-year figures. Therefore, the sets of states included in these figures may differ from those in previous reports (NCES 2015-046 or NCES 2021-036).

Figures showing the NAEP equivalent scores of state standards for proficient performance have vertical lines around each state's NAEP equivalent score, which indicate the margin of error associated with the estimate. If the lower or upper limit of the margin of error crosses a line associated with a NAEP achievement level, the state standard is classified in the higher level. When shown, a black triangle under a state indicates that the relative error of the NAEP equivalent score of that state's standard is large (greater than 0.5) and results should be interpreted with caution. More details on the results can be found in the **Technical Notes** (NCES 2026-014-A).

Although NAEP results are reported on a 0–500 scale for different grades and subjects, they do not have the same meaning across grades or subjects. Therefore, results shown in figures or tables are not comparable across grades or subjects.

Table 3 displays the NAEP cut score level in reading and mathematics for grades 4 and 8. Note that NAEP achievement levels are distinct from those used on state assessments.

Table 3. NAEP achievement level cut scores by subject and grade: 2022

	Reading		Mathematics	
NAEP achievement level	**Grade 4**	**Grade 8**	**Grade 4**	**Grade 8**
NAEP Basic	208	243	214	262
NAEP Proficient	238	281	249	299
NAEP Advanced	268	323	282	333

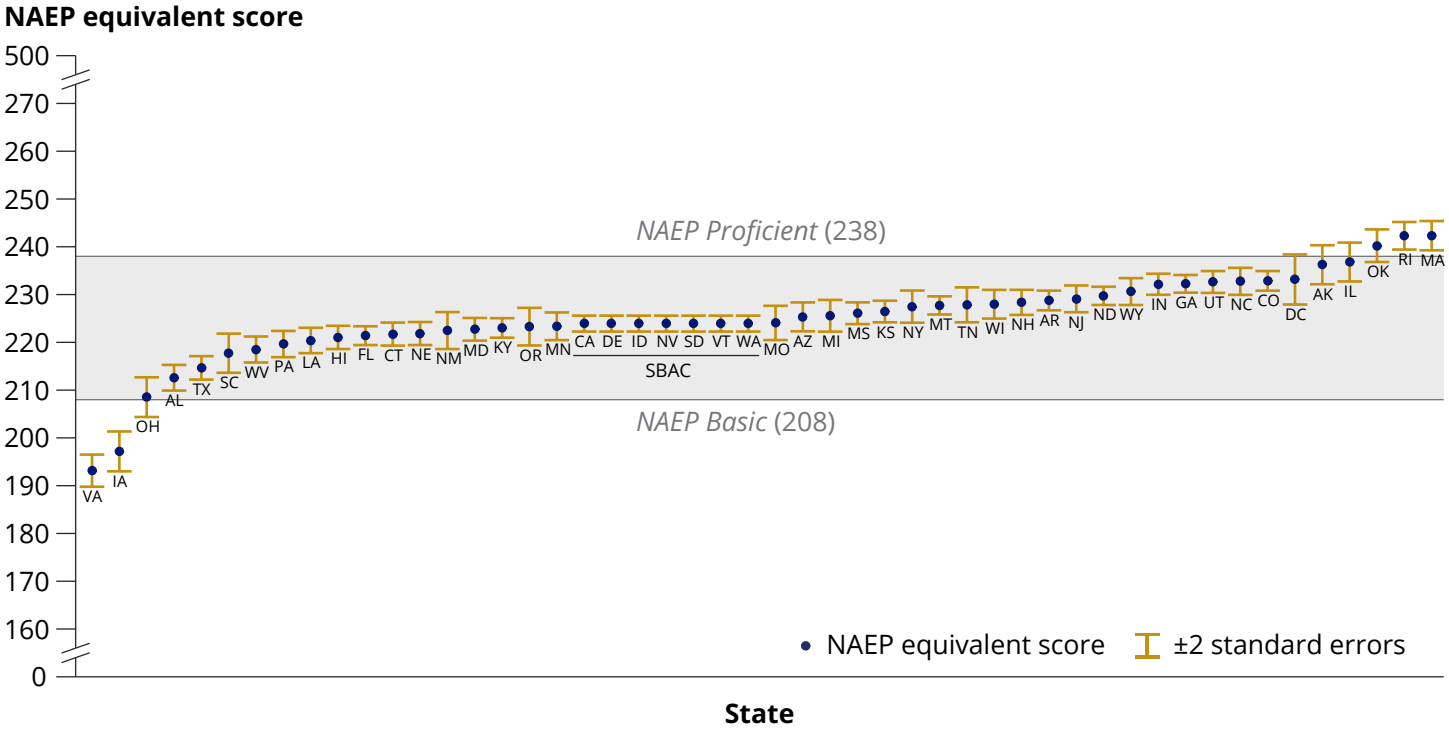
NOTE: The NAEP scales in reading and mathematics range of 0–500. NAEP achievement levels are performance standards that describe what students should know and be able to do. Students performing at or above the *NAEP Proficient* level on NAEP assessments demonstrate solid academic performance and competency over challenging subject matter. *NAEP Proficient* does not represent grade-level proficiency as determined by other assessment standards (e.g., state or district assessments). NAEP scores do not have the same meaning across grades or subjects, and NAEP cut scores are not comparable across grades or subjects. The NAEP achievement level cut scores shown in the table are maintained with no changes since their establishment in the early 1990s. Learn more about the NAEP achievement levels.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), retrieved from https://nces.ed.gov/nationsreportcard/reading/achieveall.aspx (for reading) and https://nces.ed.gov/nationsreportcard/mathematics/achieveall.aspx (for mathematics).

2022 Grade 4 Reading

Overall, a larger number of states had standards for proficient performance at the *NAEP Basic* level or higher in 2022 than in 2013. In addition, the difference between the highest and lowest NAEP equivalent scores was larger than in 2019 but smaller than in 2013. The following figures present results for grade 4 reading.

For Figure 1, 50 states are included in the analysis; for Figure 2 and Figure 3, the set of 48 states with all 3 years of data available is used in both analyses.

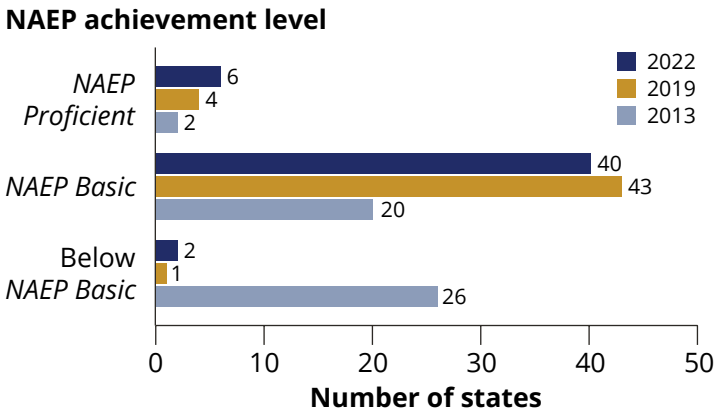
Figure 1. NAEP equivalent scores of state grade 4 reading standards for proficient performance, by state: 2022



NOTE: The NAEP scale in reading ranges from 0 to 500. The numbers reported in this figure are rounded. 50 states were included in the analysis. All jurisdictions, including the District of Columbia and Puerto Rico, are collectively referred to as states in this report. SBAC refers to Smarter Balanced Assessment Consortium. For states that participated in SBAC, this chart shows the mapping results of the testing program, with all participating states considered as one single jurisdiction. Connecticut, Montana, and Oregon were not included in estimating the SBAC reading standard because these states either did not use all SBAC reading assessment components or used a custom blueprint for their reading assessment. Maine was not included in the study because the state administered an interim assessment in 2021–22. Puerto Rico was not included because the NAEP grade 4 reading assessment was not administered in the jurisdiction. The classification of NAEP equivalent scores into NAEP achievement levels accounts for the margin of error associated with each estimate. The standard of a state or testing program is assigned the highest NAEP achievement level for which the upper bound of the margin of error of its NAEP equivalent score equals or exceeds the cut score of the achievement level.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2022 Reading Assessment.

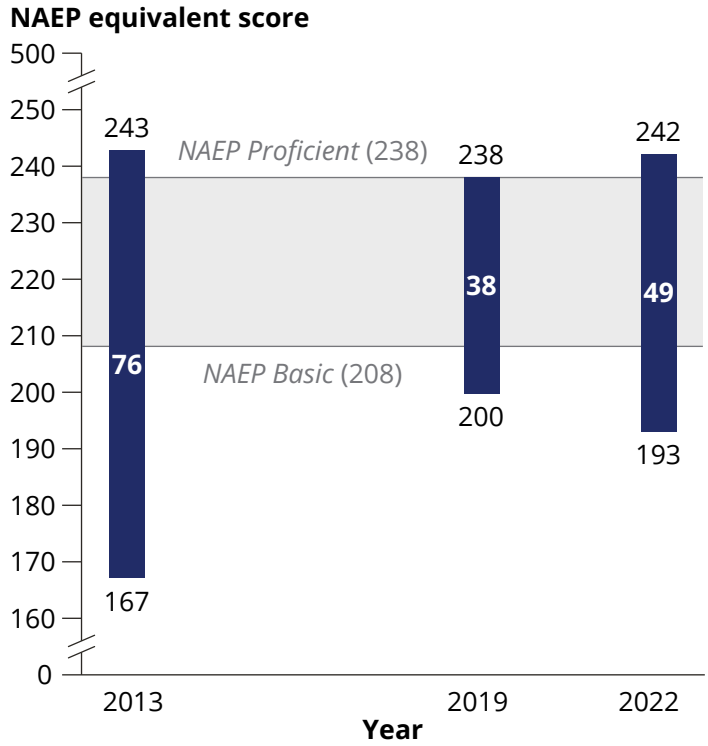
- In grade 4 reading, 48 of the 50 states included in the study had standards at or above the *NAEP Basic* level. Six states—Alaska, District of Columbia, Illinois, Massachusetts, Oklahoma, and Rhode Island—had standards at the *NAEP Proficient* level, while two states—Iowa and Virginia—had standards below the *NAEP Basic* level.
- The SBAC standard mapped at the *NAEP Basic* level.

Figure 2. Number of states, by state standards for proficient performance in grade 4 reading classified into NAEP achievement levels: 2013, 2019, and 2022



- Of the 48 states with all 3 years of data, 46 states had grade 4 reading standards for proficient performance at or above the *NAEP Basic* level in 2022, a decrease from 47 states in 2019 and an increase from 22 states in 2013.
- Six states had grade 4 reading standards for proficient performance at the *NAEP Proficient* level in 2022, an increase from four states in 2019 and two states in 2013.
- Two states had grade 4 reading standards for proficient performance that were below the *NAEP Basic* level in 2022, an increase from one state in 2019 and a decrease from 26 states in 2013.

Figure 3. Range between the highest and lowest NAEP equivalent scores of state standards for proficient performance in grade 4 reading: 2013, 2019, and 2022



- In 2022, the difference between the highest and lowest NAEP equivalent scores of state standards for proficient performance for grade 4 reading was 49 points, which is larger than the 38-point difference in 2019 and smaller than the 76-point difference in 2013.
- The 49-point difference between the highest and lowest NAEP equivalent scores in 2022 is larger than the 30-point difference between the 2022 grade 4 reading achievement level cut scores for the *NAEP Basic* and *NAEP Proficient* levels.

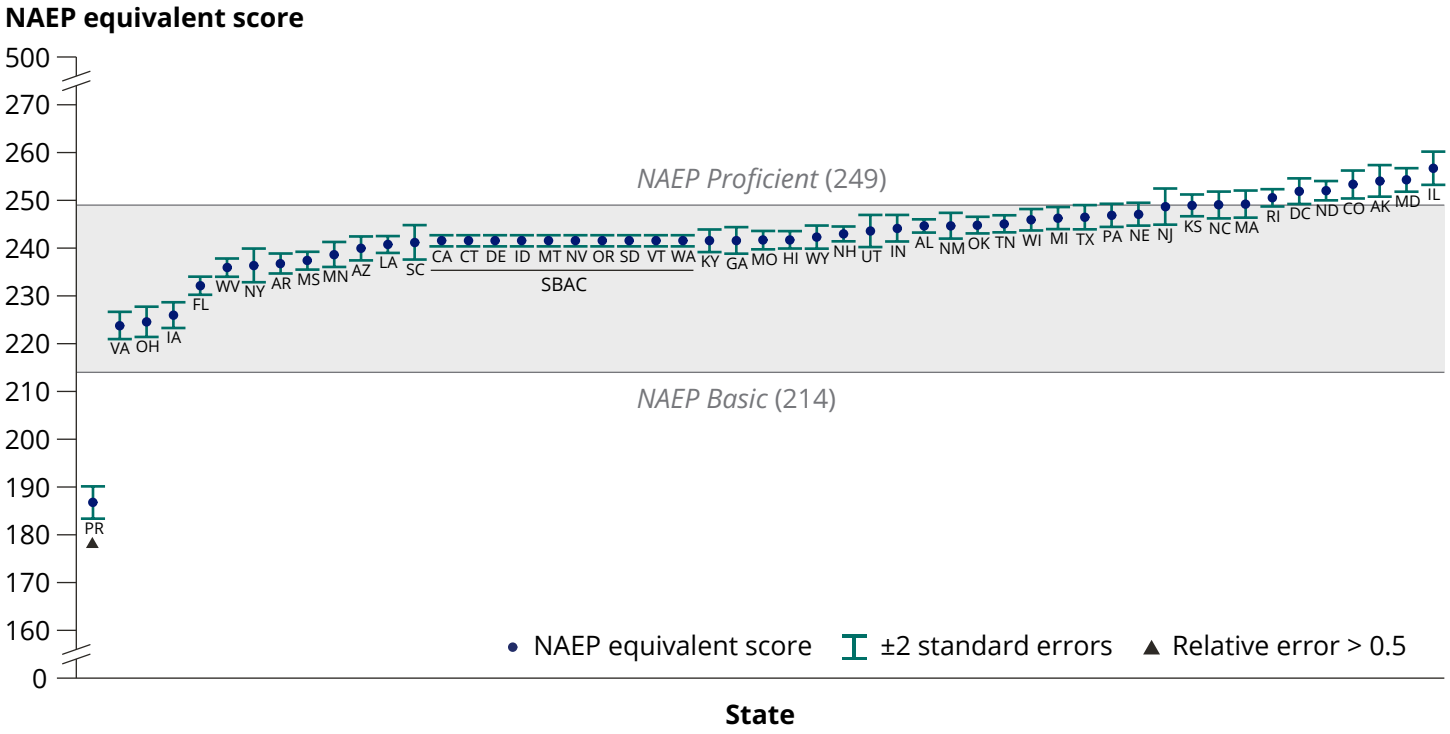
NOTE: All jurisdictions, including the District of Columbia and Puerto Rico, are collectively referred to as states in this report. For comparability, Maine, New Hampshire, Puerto Rico, and West Virginia were excluded from the counts. As a result, 48 states with all 3 years of data were used in the comparisons (see **table 4**). NAEP achievement level cut scores were the same in all three years depicted in these figures. The classification of NAEP equivalent scores into NAEP achievement levels accounts for the margin of error associated with each estimate. Results shown in the figures are based on unrounded numbers.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2013, 2019, and 2022 Reading Assessments.

2022 Grade 4 Mathematics

Overall, a larger number of states had standards for proficient performance at the *NAEP Basic* level or higher in 2022 than in 2013. In addition, the difference between the highest and lowest NAEP equivalent scores was smaller than in 2019 and 2013. The following figures present results for grade 4 mathematics.

For Figure 4, 51 states are included in the analysis; for Figure 5 and Figure 6, the set of 49 states with all 3 years of data available is used in both analyses.

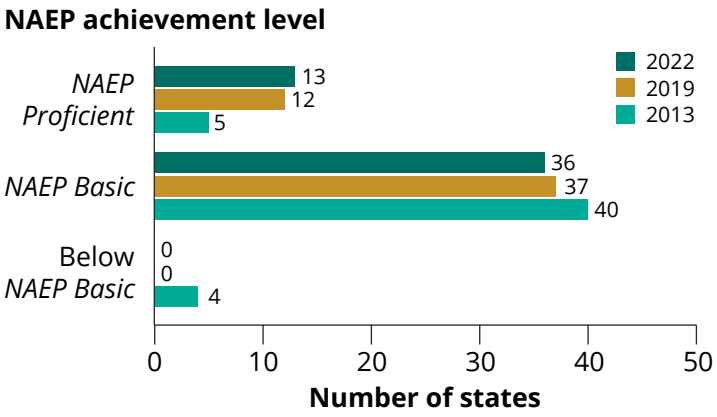
Figure 4. NAEP equivalent scores of state grade 4 mathematics standards for proficient performance, by state: 2022



NOTE: The NAEP scale in mathematics ranges from 0 to 500. The numbers reported in this table are rounded. 51 states were included in the analysis. All jurisdictions, including the District of Columbia and Puerto Rico, are collectively referred to as states in this report. SBAC refers to Smarter Balanced Assessment Consortium. For states that participated in SBAC, this chart shows the mapping results of the testing program, with all participating states considered as one single jurisdiction. Maine was not included in the study because the state administered an interim assessment in 2021–22. The classification of NAEP equivalent scores into NAEP achievement levels accounts for the margin of error associated with each estimate. The standard of a state or testing program is assigned the highest NAEP achievement level for which the upper bound of the margin of error of its NAEP equivalent score equals or exceeds the cut score of the achievement level.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2022 Mathematics Assessment.

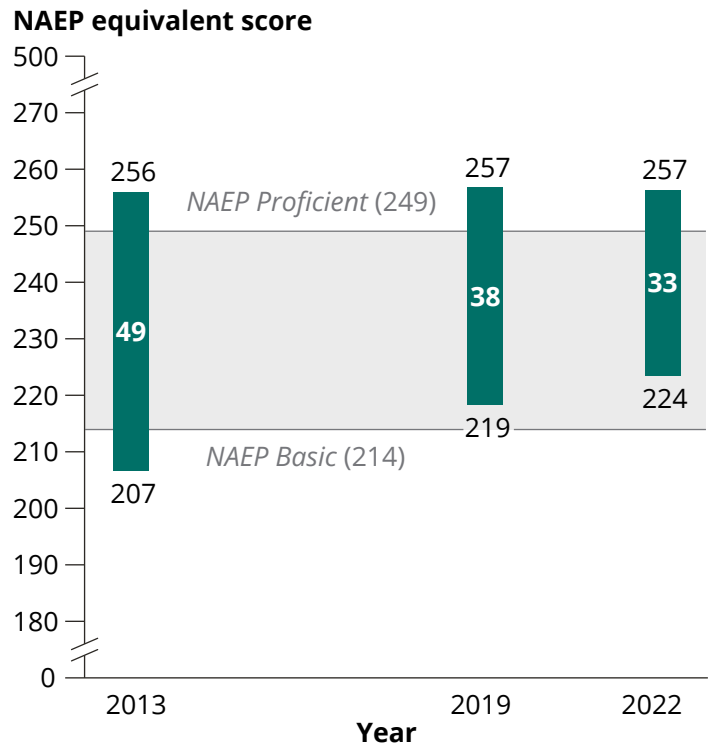
- In grade 4 mathematics, 50 of the 51 states included in the study had standards at or above the *NAEP Basic* level. Thirteen states—Alaska, Colorado, District of Columbia, Illinois, Kansas, Maryland, Massachusetts, Nebraska, New Jersey, North Carolina, North Dakota, Pennsylvania, and Rhode Island—had standards at the *NAEP Proficient* level.
- The SBAC standard mapped at the *NAEP Basic* level.

Figure 5. Number of states, by state standards for proficient performance in grade 4 mathematics classified into NAEP achievement levels: 2013, 2019, and 2022



- Of the 49 states with all 3 years of data, all had grade 4 mathematics standards for proficient performance at or above the *NAEP Basic* level in 2022 and in 2019, an increase from 45 states in 2013.
- Thirteen states had grade 4 mathematics standards for proficient performance at the *NAEP Proficient* level in 2022, an increase from twelve states in 2019 and five states in 2013.
- None of the 49 states had grade 4 mathematics standards for proficient performance that were below the *NAEP Basic* level in 2022 or in 2019, a decrease from four states in 2013.

Figure 6. Range between the highest and lowest NAEP equivalent scores of state standards for proficient performance in grade 4 mathematics: 2013, 2019, and 2022



- In 2022, the difference between the highest and lowest NAEP equivalent scores of state standards for proficient performance for grade 4 mathematics was 33 points, which is smaller than the 38-point difference in 2019 and the 49-point difference in 2013.
- The 33-point difference between the highest and lowest NAEP equivalent scores in 2022 is not significantly different from the 35-point difference between the 2022 grade 4 mathematics achievement level cut scores for the *NAEP Basic* and *NAEP Proficient* levels.

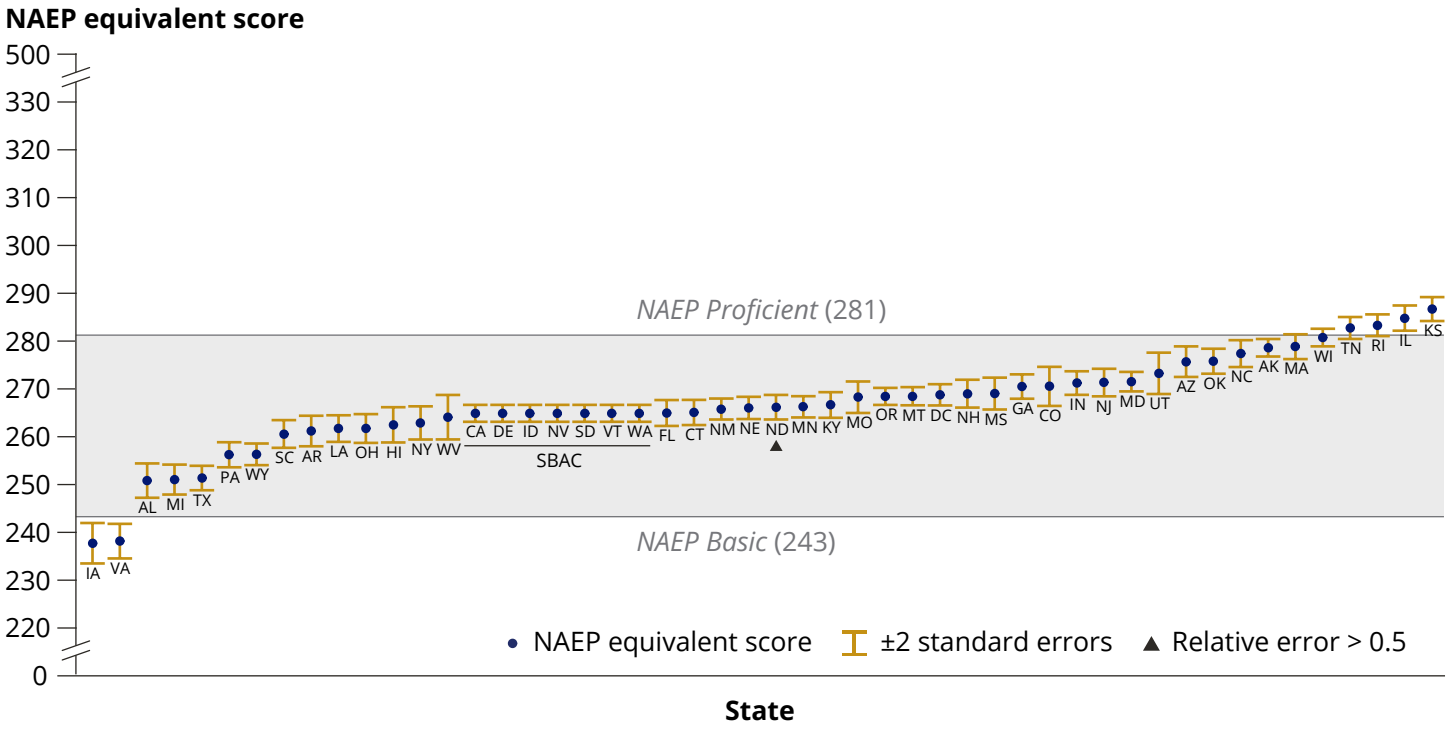
NOTE: All jurisdictions, including the District of Columbia and Puerto Rico, are collectively referred to as states in this report. For comparability, Maine, New Hampshire, and Puerto Rico were excluded from the counts. As a result, 49 states with all 3 years of data were used in the comparisons (see **table 4**). NAEP achievement level cut scores were the same in all three years depicted in these figures. The classification of NAEP equivalent scores into NAEP achievement levels accounts for the margin of error associated with each estimate. Results shown in the figures are based on unrounded numbers.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2013, 2019, and 2022 Mathematics Assessments.

2022 Grade 8 Reading

Overall, a larger number of states had standards for proficient performance at the *NAEP Basic* level or higher in 2022 than in 2013. In addition, the difference between the highest and lowest NAEP equivalent scores was not measurably different from 2019 but smaller than in 2013. The following figures present results for grade 8 reading.

For Figure 7, 50 states are included in the analysis; for Figure 8 and Figure 9, the set of 45 states with all 3 years of data available is used in both analyses.

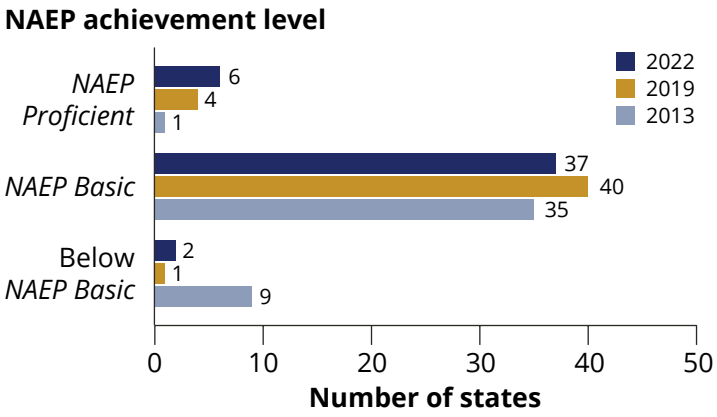
Figure 7. NAEP equivalent scores of state grade 8 reading standards for proficient performance, by state: 2022



NOTE: The NAEP scale in reading ranges from 0 to 500. The numbers reported in this table are rounded. 50 states were included in the analysis. All jurisdictions, including the District of Columbia and Puerto Rico, are collectively referred to as states in this report. SBAC refers to Smarter Balanced Assessment Consortium. For states that participated in SBAC, this chart shows the mapping results of the testing program, with all participating states considered as one single jurisdiction. Connecticut, Montana, and Oregon were not included in estimating the SBAC reading standard because these states either did not use all SBAC reading assessment components or used a custom blueprint for their reading assessment. Maine was not included in the study because the state administered an interim assessment in 2021–22. Puerto Rico was not included because the NAEP grade 8 reading assessment was not administered in the jurisdiction. The District of Columbia, New Hampshire, and New York administered end-of-course assessments and had student participation rates of less than 95% on their end-of-grade assessments but were included because their assessment data files contained only end-of-grade results. The classification of NAEP equivalent scores into NAEP achievement levels accounts for the margin of error associated with each estimate. The standard of a state or testing program is assigned the highest NAEP achievement level for which the upper bound of the margin of error of its NAEP equivalent score equals or exceeds the cut score of the achievement level.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2022 Reading Assessment.

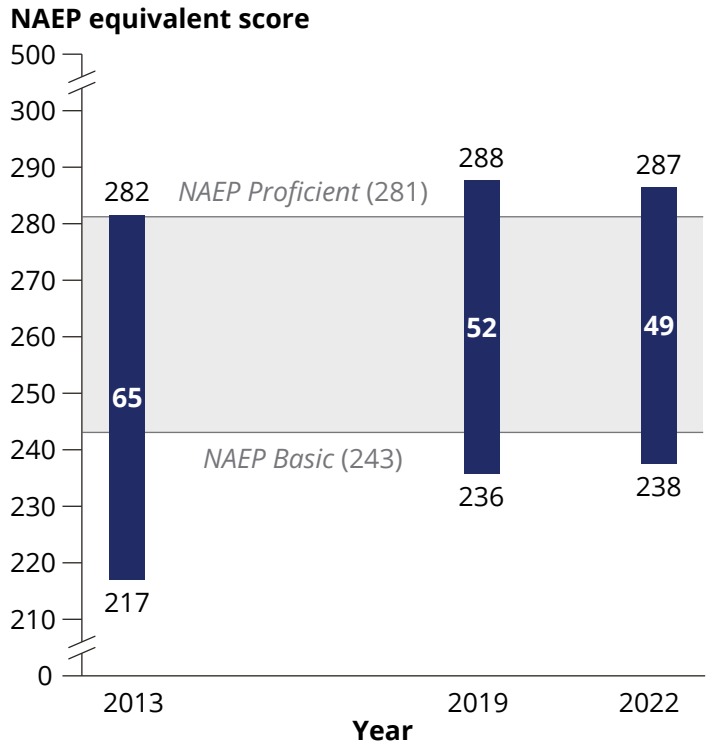
- In grade 8 reading, 48 of the 50 states included in the study had standards at or above the *NAEP Basic* level. Six states—Illinois, Kansas, Massachusetts, Rhode Island, Tennessee, and Wisconsin—had standards at the *NAEP Proficient* level, while two states—Iowa and Virginia—had standards below the *NAEP Basic* level.
- The SBAC standard mapped at the *NAEP Basic* level.

Figure 8. Number of states, by state standards for proficient performance in grade 8 reading classified into NAEP achievement levels: 2013, 2019, and 2022



- Of the 45 states with all 3 years of data, 43 had grade 8 reading standards for proficient performance at or above the *NAEP Basic* level in 2022, a decrease from 44 states in 2019 and an increase from 36 states in 2013.
- Six states had grade 8 reading standards for proficient performance at the *NAEP Proficient* level in 2022, an increase from four states in 2019 and one state in 2013.
- Two states had grade 8 reading standards for proficient performance that were below the *NAEP Basic* level in 2022, an increase from one state in 2019 and a decrease from nine states in 2013.

Figure 9. Range between the highest and lowest NAEP equivalent scores of state standards for proficient performance in grade 8 reading: 2013, 2019, and 2022



- In 2022, the difference between the highest and lowest NAEP equivalent scores of state standards for proficient performance for grade 8 reading was 49 points, which is not significantly different from the 52-point difference in 2019 and smaller than the 65-point difference in 2013.
- The 49-point difference between the highest and lowest NAEP equivalent scores in 2022 is larger than the 38-point difference between the 2022 grade 8 reading achievement level cut scores for the *NAEP Basic* and *NAEP Proficient* levels.

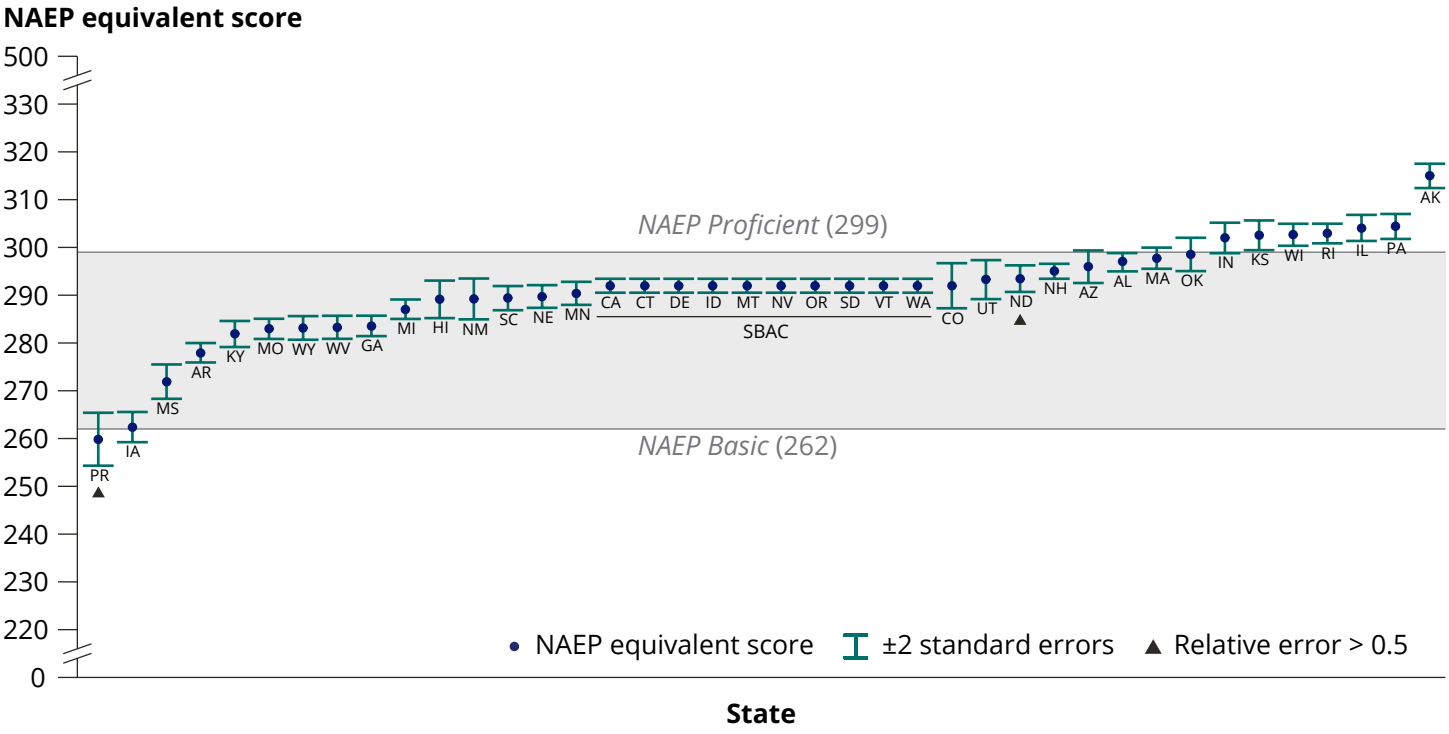
NOTE: All jurisdictions, including the District of Columbia and Puerto Rico, are collectively referred to as states in this report. For comparability, Delaware, Georgia, Maine, New Hampshire, Puerto Rico, Texas, and West Virginia were excluded from the counts. As a result, 45 states with all 3 years of data were used in the comparisons (see **table 4**). NAEP achievement level cut scores were the same in all three years depicted in these figures. The classification of NAEP equivalent scores into NAEP achievement levels accounts for the margin of error associated with each estimate. Results shown in the figures are based on unrounded numbers.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2013, 2019, and 2022 Reading Assessments.

2022 Grade 8 Mathematics

Overall, a larger number of states had standards for proficient performance at the *NAEP Basic* level or higher in 2022 than in 2013. In addition, the difference between the highest and lowest NAEP equivalent scores was larger than in 2019 and not measurably different from 2013. The following figures present results for grade 8 mathematics.

For Figure 10, 40 states are included in the analysis; for Figure 11 and Figure 12, the set of 32 states with all 3 years of data available is used in both analyses.

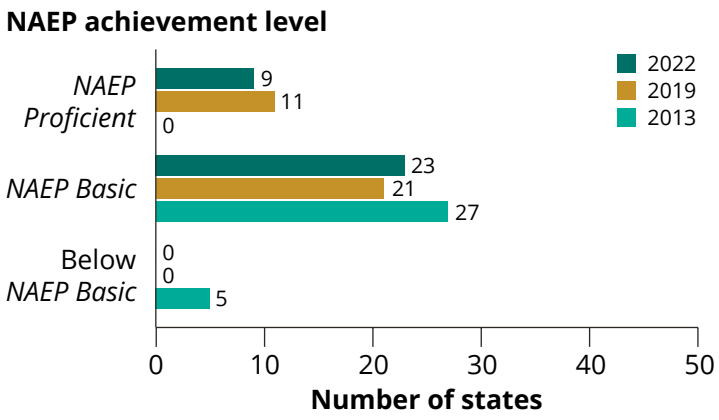
Figure 10. NAEP equivalent scores of state grade 8 mathematics standards for proficient performance, by state: 2022



NOTE: The NAEP scale in mathematics ranges from 0 to 500. The numbers reported in this figure are rounded. 40 states were included in the analysis. All jurisdictions, including the District of Columbia and Puerto Rico, are collectively referred to as states in this report. SBAC refers to Smarter Balanced Assessment Consortium. For states that participated in SBAC, this chart shows the mapping results of the testing program, with all participating states considered as one single jurisdiction. Maine was not included in the study because the state administered an interim assessment in 2021–22. Eleven additional states were not included because their assessment data files had end-of-grade assessment results mixed with other assessment results, and the student participation rate for the end-of-grade assessment was less than 95%. Missouri and New Hampshire administered end-of-course assessments and had student participation rates of less than 95% on their end-of-grade assessments but were included because their assessment data files contained only end-of-grade results. The classification of NAEP equivalent scores into NAEP achievement levels accounts for the margin of error associated with each estimate. The standard of a state or testing program is assigned the highest NAEP achievement level for which the upper bound of the margin of error of its NAEP equivalent score equals or exceeds the cut score of the achievement level.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2022 Mathematics Assessment.

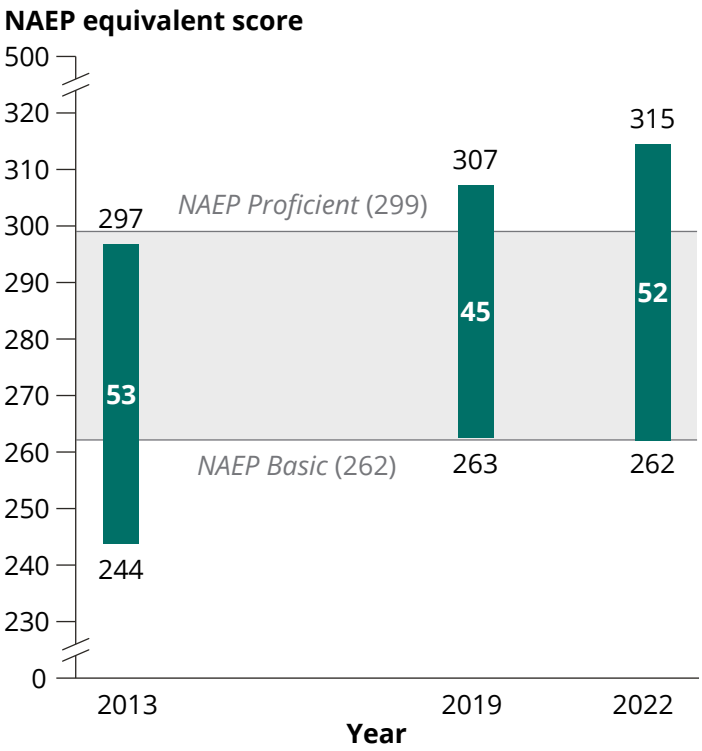
- For grade 8 mathematics, all states included in the study had standards at or above the *NAEP Basic* level. Ten states—Alaska, Arizona, Illinois, Indiana, Kansas, Massachusetts, Oklahoma, Pennsylvania, Rhode Island, and Wisconsin—had standards at the *NAEP Proficient* level.
- The SBAC standard mapped at the *NAEP Basic* level.

Figure 11. Number of states, by state standards for proficient performance in grade 8 mathematics classified into NAEP achievement levels: 2013, 2019, and 2022



- Of the 32 states with all 3 years of data, all had grade 8 mathematics standards for proficient performance at or above the *NAEP Basic* level in 2022 and 2019, an increase from 27 states in 2013.
- Nine states had grade 8 mathematics standards for proficient performance at the *NAEP Proficient* level in 2022, a decrease from 11 states in 2019 and an increase from no states in 2013.
- None of the 32 states had standards for proficient performance that were below the *NAEP Basic* level in 2022 or 2019, a decrease from five states in 2013.

Figure 12. Range between the highest and lowest NAEP equivalent scores of state standards for proficient performance in grade 8 mathematics: 2013, 2019, and 2022



- In 2022, the difference between the highest and lowest NAEP equivalent scores of state standards for proficient performance for grade 8 mathematics was 52 points, which is larger than the 45-point difference in 2019 and not significantly different from the 53-point difference in 2013.
- The 52-point difference between the highest and lowest NAEP equivalent scores in 2022 is larger than the 37-point difference between the 2022 grade 8 mathematics achievement level cut scores for the *NAEP Basic* and *NAEP Proficient* levels.

NOTE: All jurisdictions, including the District of Columbia and Puerto Rico, are collectively referred to as states in this report. For comparability, Arizona, California, Delaware, District of Columbia, Florida, Georgia, Louisiana, Maine, Maryland, Missouri, New Hampshire, New Jersey, New Mexico, New York, North Carolina, Ohio, Puerto Rico, Tennessee, Texas, and Virginia were excluded from the counts. As a result, 32 states with all 3 years of data were used in the comparisons (see **table 4**). NAEP achievement level cut scores were the same in all three years depicted in these figures. The classification of NAEP equivalent scores into NAEP achievement levels accounts for the margin of error associated with each estimate. Results shown in the figures are based on unrounded numbers.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2013, 2019, and 2022 Mathematics Assessments.

Appendix A

Table 4. State assessment data availability in grades 4 and 8, by subject and year: 2013, 2019, and 2022

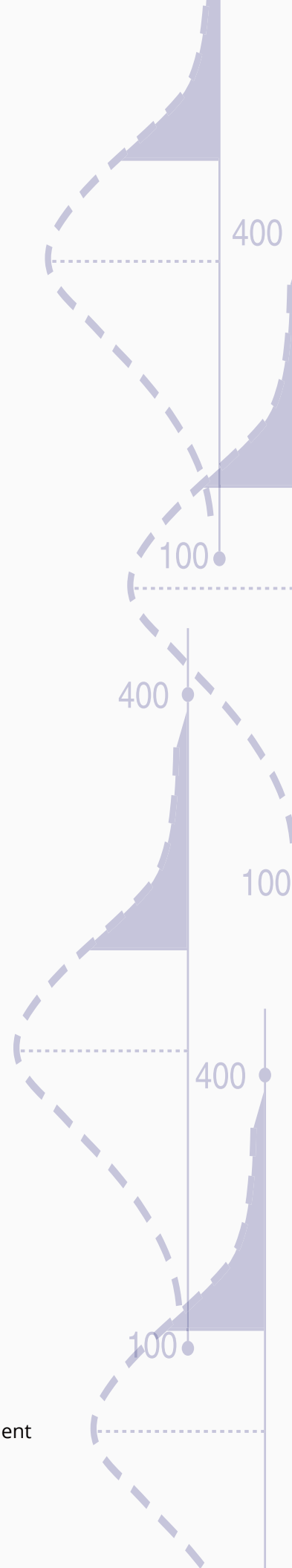
State	Grade 4						Grade 8					
	Reading			Mathematics			Reading			Mathematics		
	2013	2019	2022	2013	2019	2022	2013	2019	2022	2013	2019	2022
Alabama	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Alaska	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Arizona	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	—	Y
Arkansas	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
California	Y	Y	Y	Y	Y	Y	Y	Y	Y	—	Y	Y
Colorado	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Connecticut	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Delaware	Y	Y	Y	Y	Y	Y	Y	—	Y	Y	—	Y
District of Columbia	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	—	—
Florida	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	—	—
Georgia	Y	Y	Y	Y	Y	Y	Y	—	Y	Y	—	Y
Hawaii	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Idaho	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Illinois	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Indiana	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Iowa	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Kansas	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Kentucky	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Louisiana	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	—	—
Maine	Y	Y	—	Y	Y	—	Y	Y	—	Y	Y	—
Maryland	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	—	—
Massachusetts	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Michigan	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Minnesota	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Mississippi	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Missouri	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	—	Y
Montana	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Nebraska	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Nevada	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
New Hampshire	Y	—	Y	Y	—	Y	Y	—	Y	Y	—	Y
New Jersey	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	—	—
New Mexico	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	—	Y
New York	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	—	—
North Carolina	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	—	—
North Dakota	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Ohio	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	—	—
Oklahoma	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Oregon	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Pennsylvania	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Puerto Rico	—	—	—	—	Y	Y	—	—	—	—	Y	Y

See notes at end of table.

Table 4. State assessment data availability in grades 4 and 8, by subject and year: 2013, 2019, and 2022—Continued

State	Grade 4						Grade 8					
	Reading			Mathematics			Reading			Mathematics		
	2013	2019	2022	2013	2019	2022	2013	2019	2022	2013	2019	2022
Rhode Island	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
South Carolina	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
South Dakota	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Tennessee	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	—	—
Texas	Y	Y	Y	Y	Y	Y	Y	—	Y	Y	—	—
Utah	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Vermont	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Virginia	Y	Y	Y	Y	Y	Y	Y	Y	Y	—	—	—
Washington	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
West Virginia	Y	—	Y	Y	Y	Y	Y	—	Y	Y	Y	Y
Wisconsin	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Wyoming	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Y Available.
— Not available.
NOTE: All jurisdictions, including the District of Columbia and Puerto Rico, are collectively referred to as states in this report. There are 48 states that have data available for all three years in grade 4 reading, 49 in grade 4 mathematics, 45 states in grade 8 reading, and 32 states in grade 8 mathematics.
SOURCE: State education agencies.



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