

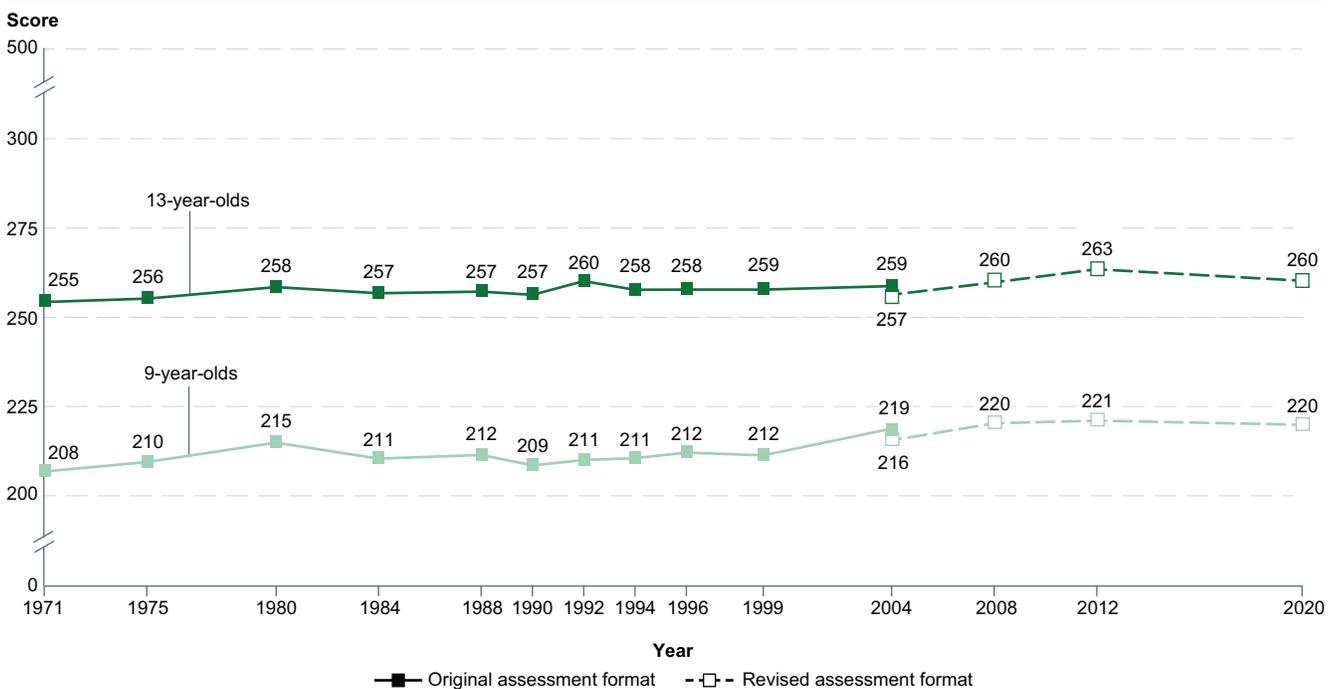
## Reading and Mathematics Score Trends

*NAEP long-term trend results indicate that the average reading and mathematics achievement of 9- and 13-year-olds improved between the 1970s and 2020. However, between 2012 and 2020 the average reading and mathematics scores for 9-year-olds did not change measurably. For 13-year-olds, the average reading and mathematics scores in 2020 were lower than in 2012.*

Since the 1970s, the long-term trend National Assessment of Educational Progress (NAEP) has reported periodic data on the reading and mathematics achievement of 9-, 13-, and 17-year-olds enrolled in public and private schools.<sup>1</sup> Nearly five decades of results offer an

extended view of student achievement in reading and mathematics. Results reported in this indicator focus on 2020 assessment data, which include the performance of nationally representative samples of 9-year-old and 13-year-old students.<sup>2,3</sup>

**Figure 1. Average reading scale scores on the long-term trend National Assessment of Educational Progress (NAEP), by age: Selected years, 1971 through 2020**



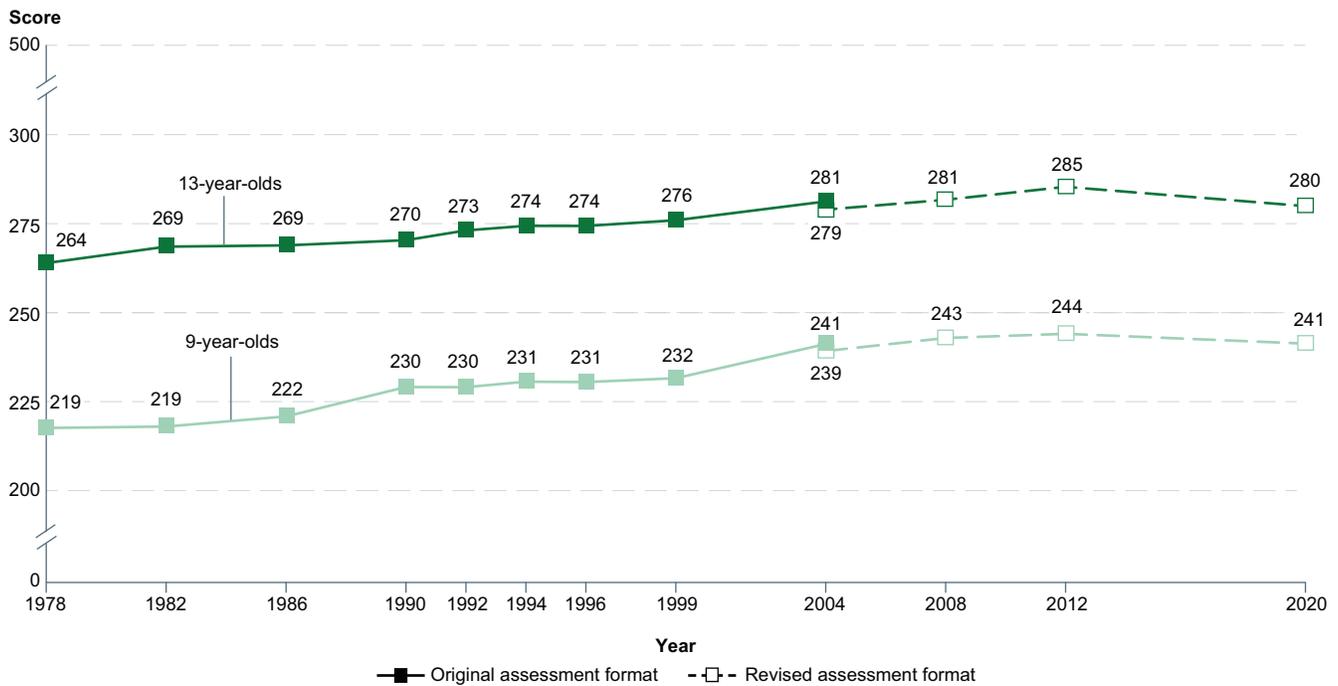
NOTE: Includes public, private, Bureau of Indian Education, and Department of Defense Education Activity schools. NAEP scores range from 0 to 500. Several changes were made to the long-term trend assessment in 2004 to align it with current assessment practices and policies applicable to the NAEP main assessments. This included allowing accommodations for students with disabilities and for English learners. These changes have been carried forward in more recent data collections. To assess the impact of these revisions, two assessments were conducted in 2004, one based on the original assessment and one based on the revised assessment. In 2008, 2012, and 2020, only the revised assessment was used. For 2004 (revised format) and later years, excludes only those students with disabilities and English learners who were unable to be tested even with accommodations (2 to 8 percent of all students, depending on age and assessment year). Although rounded numbers are displayed, the figures are based on unrounded data.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), *NAEP 2020 Trends in Academic Progress*; and 2020 NAEP Long-Term Trend Reading Assessment. See *Digest of Education Statistics 2021*, table 221.85.

The national trend in reading achievement shows improvement at ages 9 and 13 between the early 1970s and 2020. The average reading scores for 9- and 13-year-olds in 2020 were higher than those in 1971 (12 and 5 points higher). However, the average score of 220 for 9-year-olds in 2020 was not measurably different compared with the previous assessment in 2012. For 13-year-olds, the average score was lower in 2020 than in 2012 (260 vs. 263), marking the first time reading scores for this age group declined between assessments.

Average reading scores increased for both male and female 9- and 13-year-olds between 1971 and 2020. For example, average scores increased 16 points for male 9-year-olds and 8 points for female 9-year-olds between 1971 and 2020. However, the average scores by sex and age in 2020 were not measurably different compared with the previous assessment in 2012.

**Figure 2. Average mathematics scale scores on the long-term trend National Assessment of Educational Progress (NAEP), by age: Selected years, 1978 through 2020**



NOTE: Includes public, private, Bureau of Indian Education, and Department of Defense Education Activity schools. NAEP scores range from 0 to 500. Several changes were made to the long-term trend assessment in 2004 to align it with current assessment practices and policies applicable to the NAEP main assessments. This included allowing accommodations for students with disabilities and for English learners. These changes have been carried forward in more recent data collections. To assess the impact of these revisions, two assessments were conducted in 2004, one based on the original assessment and one based on the revised assessment. In 2008, 2012, and 2020, only the revised assessment was used. For 2004 (revised format) and later years, excludes only those students with disabilities and English learners who were unable to be tested even with accommodations (1 to 8 percent of all students, depending on age and assessment year). The 1973 mathematics data are excluded because they were extrapolated. For more information, see <https://www.nationsreportcard.gov/ltt/about/ltt-mathematics/?age=9#1973-mathematics-result>. Although rounded numbers are displayed, the figures are based on unrounded data.  
SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), *NAEP 2020 Trends in Academic Progress*; and 2020 NAEP Long-Term Trend Mathematics Assessment. See *Digest of Education Statistics 2021*, table 222.85.

The national trend in mathematics achievement also shows improvement at ages 9 and 13 between the late 1970s and 2020.<sup>4</sup> The average mathematics scores for 9- and 13-year-olds in 2020 were higher than those in 1978 (23 and 16 points higher). Changes in average mathematics scores from 2012 to 2020 followed similar patterns as reading scores for both 9- and 13-year-olds. For 9-year-olds, the average mathematics score of 241 in 2020 was not measurably different compared with 2012. Meanwhile, the average mathematics score for 13-year-olds was lower in 2020 than in 2012 (280 vs. 285), marking the first time mathematics scores for this age group declined between assessments.

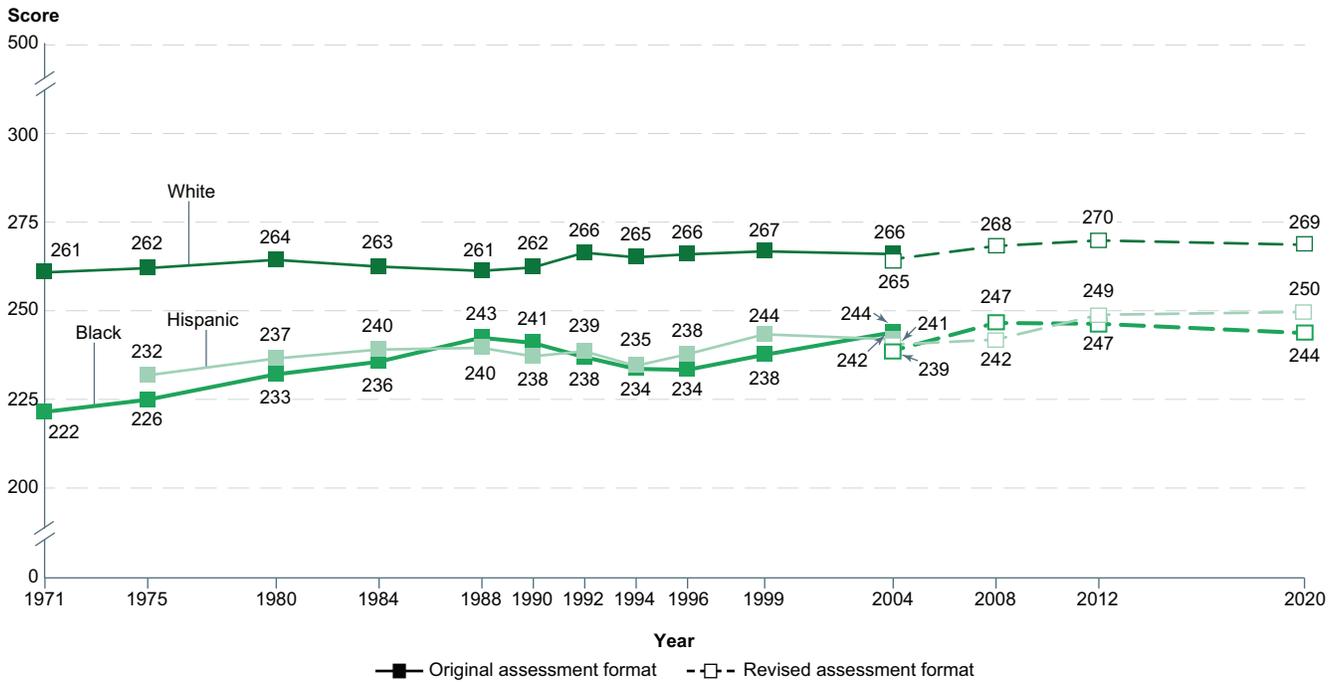
Average mathematics scores increased for both male and female 9- and 13-year-olds between 1978 and 2020. For example, average scores increased 26 points for male 9-year-olds and 19 points for female 9-year-olds between 1978 and 2020. However, average scores for male 13-year-olds and female 9- and 13-year-olds were lower in 2020 compared with the previous assessment in 2012. Average scores for male 9-year-olds were not measurably different in 2020 compared with 2012.

In addition to reporting average scores in reading and mathematics achievement for 9- and 13-year-olds, scores

are reported at five selected percentiles to show the progress made by lower- (10th and 25th percentiles), middle- (50th percentile), and higher- (75th and 90th percentiles) performing students. The 2020 reading scores for the lowest-performing students (10th percentile) were lower for both 9- and 13-year-olds compared with the previous assessment in 2012. In mathematics, scores were lower in 2020 than in 2012 for 9-year-olds performing at the 10th and 25th percentiles and lower for 13-year-olds performing at the 10th, 25th, and 50th percentiles. For all other selected percentiles, reading and mathematics scores were not measurably different in 2020 compared with 2012.

Closing achievement gaps is a goal of both national and state education policies. The results from the 2020 NAEP long-term trend assessments show some progress toward meeting that goal. Specifically, the White-Black and White-Hispanic score gaps in reading and mathematics were generally smaller in 2020 than in the 1970s. This was the result of Black and Hispanic students generally making larger gains in achievement than White students during that period.

**Figure 3. Average reading scale scores on the long-term trend National Assessment of Educational Progress (NAEP) for 13-year-olds, by race/ethnicity: Selected years, 1971 through 2020**



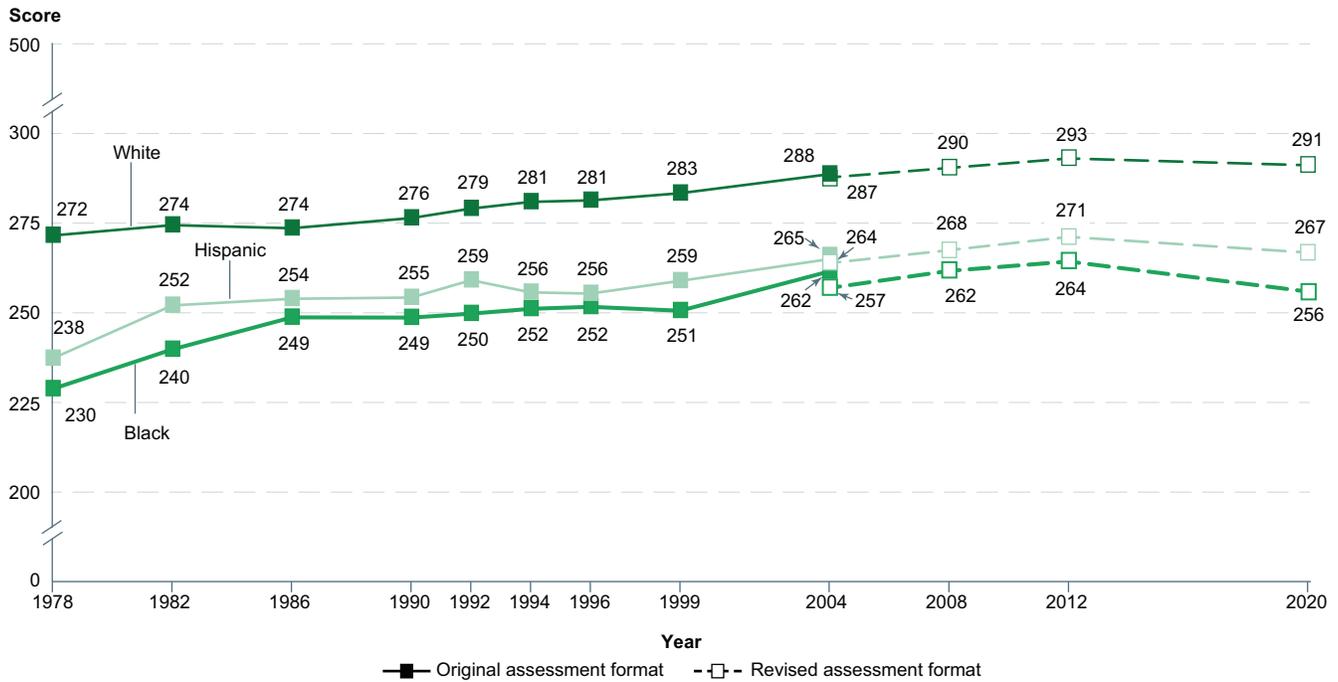
NOTE: Includes public, private, Bureau of Indian Education, and Department of Defense Education Activity schools. NAEP scores range from 0 to 500. Several changes were made to the long-term trend assessment in 2004 to align it with current assessment practices and policies applicable to the NAEP main assessments. This included allowing accommodations for students with disabilities and for English learners. These changes have been carried forward in more recent data collections. To assess the impact of these revisions, two assessments were conducted in 2004, one based on the original assessment and one based on the revised assessment. In 2008, 2012, and 2020, only the revised assessment was used. For 2004 (revised format) and later years, excludes only those students with disabilities and English learners who were unable to be tested even with accommodations (2 to 8 percent of all students, depending on age and assessment year). Race categories exclude persons of Hispanic ethnicity, except for White and Black 1971 data, which include persons of Hispanic ethnicity. Although rounded numbers are displayed, the figures are based on unrounded data.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), *NAEP 2020 Trends in Academic Progress*; and 2020 NAEP Long-Term Trend Reading Assessment. See *Digest of Education Statistics 2021*, table 221.85.

In reading, the White-Black and White-Hispanic score gaps narrowed from the 1970s to 2020 at ages 9 and 13, even though the average reading score of White students remained 18 or more points higher than the average scores for Black and Hispanic students in 2020. For example, at age 13, Black and Hispanic students both made larger gains in reading scores from the 1970s to 2020 than did White students, leading to a narrowing of the White-Black and White-Hispanic score gaps in 2020. From 1971 to 2020, White 13-year-olds had an 8-point gain, and their Black peers had a 22-point gain. Larger gains for Black than for

White 13-year-olds during the period narrowed the White-Black gap from 39 points in 1971 to 24 points in 2020. Similarly, Hispanic 13-year-olds had an 18-point gain in reading from 1975 to 2020, compared with the 6-point gain in reading for their White peers during the same period.<sup>5</sup> This narrowed the White-Hispanic gap from 30 points in 1975 to 19 points in 2020. The average reading score was not measurably different between 2012 and 2020 for any racial/ethnic group examined. Accordingly, the White-Black and White-Hispanic gaps did not change between these two years.

**Figure 4. Average mathematics scale scores on the long-term trend National Assessment of Educational Progress (NAEP) for 13-year-olds, by race/ethnicity: Selected years, 1978 through 2020**



NOTE: Includes public, private, Bureau of Indian Education, and Department of Defense Education Activity schools. NAEP scores range from 0 to 500. Several changes were made to the long-term trend assessment in 2004 to align it with current assessment practices and policies applicable to the NAEP main assessments. This included allowing accommodations for students with disabilities and for English learners. These changes have been carried forward in more recent data collections. To assess the impact of these revisions, two assessments were conducted in 2004, one based on the original assessment and one based on the revised assessment. In 2008, 2012, and 2020, only the revised assessment was used. For 2004 (revised format) and later years, excludes only those students with disabilities and English learners who were unable to be tested even with accommodations (1 to 8 percent of all students, depending on age and assessment year). The 1973 mathematics data are excluded because they were extrapolated. For more information, see <https://www.nationsreportcard.gov/lt/about/lt-mathematics/?age=9#1973-mathematics-result>. Race categories exclude persons of Hispanic ethnicity. Although rounded numbers are displayed, the figures are based on unrounded data.  
 SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), *NAEP 2020 Trends in Academic Progress*; and 2020 NAEP Long-Term Trend Mathematics Assessment. See *Digest of Education Statistics 2021*, table 222.85.

In mathematics, the White-Black score gap was narrower in 2020 than in 1978 at ages 9 and 13, even though the average mathematics score of White students remained 25 or more points higher than the average score for Black students in 2020. The White-Hispanic mathematics gap was also narrower in 2020 than in 1978 at age 13, but it did not change measurably at age 9. For example, from 1978 to 2020, average mathematics scores for 13-year-olds increased 19 points for White students, 27 points for Black students, and 29 points for Hispanic students. As a result, both the White-Black gap and the White-Hispanic gap for 13-year-olds were narrower in 2020 than in 1978

(by 7 and 10 points). However, the White-Black gap was 6 points higher in 2020 than in 2012, primarily driven by the 8-point drop in mathematics scores for Black 13-year-olds between these years. The average mathematics score for Hispanic 13-year-olds was also lower in 2020 than in 2012, by 4 points. However, this did not produce any measurable change in the White-Hispanic gap. For 9-year-olds, the average mathematics score was not measurably different between 2012 and 2020 for any racial/ethnic group examined. Accordingly, the White-Black and White-Hispanic gaps for 9-year-olds did not change between these two years.

**Endnotes:**

<sup>1</sup> Long-term trend NAEP results may differ from the main NAEP results presented in other National Center for Education Statistics (NCES) publications. The long-term trend assessment measures a consistent body of knowledge and skills over an extended period, while the main NAEP undergoes changes periodically to reflect current curricula and emerging standards. In addition, several changes were made to the long-term trend assessment in 2004 to align it with current assessment practices and policies applicable to the NAEP main assessments. This included allowing accommodations for students with disabilities and for English learners. These changes have been carried forward in more recent data collections. Despite these changes to the assessment, the trend analysis is still valid.

<sup>2</sup> Typically, the assessments in reading and mathematics are also administered at age 17 during March through May, but because of the coronavirus pandemic, this data collection was postponed. For the latest NAEP long-term trend results for 17-year-olds, see *The Condition of Education 2016*.

<sup>3</sup> The assessment was administered to 9- and 13-year-olds prior to pandemic-related disruptions to schooling.

<sup>4</sup> The 1973 mathematics data are excluded from the analysis because they were extrapolated. For more information, see <https://www.nationsreportcard.gov/ltt/about/ltt-mathematics/?age=9#1973-mathematics-result>.

<sup>5</sup> Reading long-term trend results for Hispanic students were first available in 1975.

**Reference tables:** *Digest of Education Statistics 2021*, tables 221.85 and 222.85

**Related indicators and resources:** [Mathematics Performance](#); [Reading Performance](#)

**Glossary:** Achievement gap; Achievement levels, NAEP; English learner; Public school or institution; Racial/ethnic group