

Reading and Mathematics Score Trends

The average reading and mathematics scores on the long-term trend National Assessment of Educational Progress were higher in 2008 than in the early 1970s for 9- and 13-year-olds; however, scores for 17-year-olds were not measurably different from the early 1970s.

The long-term trend National Assessment of Educational Progress (NAEP) provides information on the reading and mathematics achievement of 9-, 13-, and 17-year-olds enrolled in both public and private schools in the United States. Data have been collected every 2 to 5 years since 1971 for reading and since 1973 for mathematics. Long-term trend NAEP results may differ from the main NAEP results presented in other National Center for Education Statistics (NCES) publications since 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. Several administrative changes were initiated in the 2004 long-term trend assessment that have been carried forward to 2008, including allowing accommodations for students with disabilities and for English language learners. All comparisons referring to 2004 are based on the revised assessment scores.

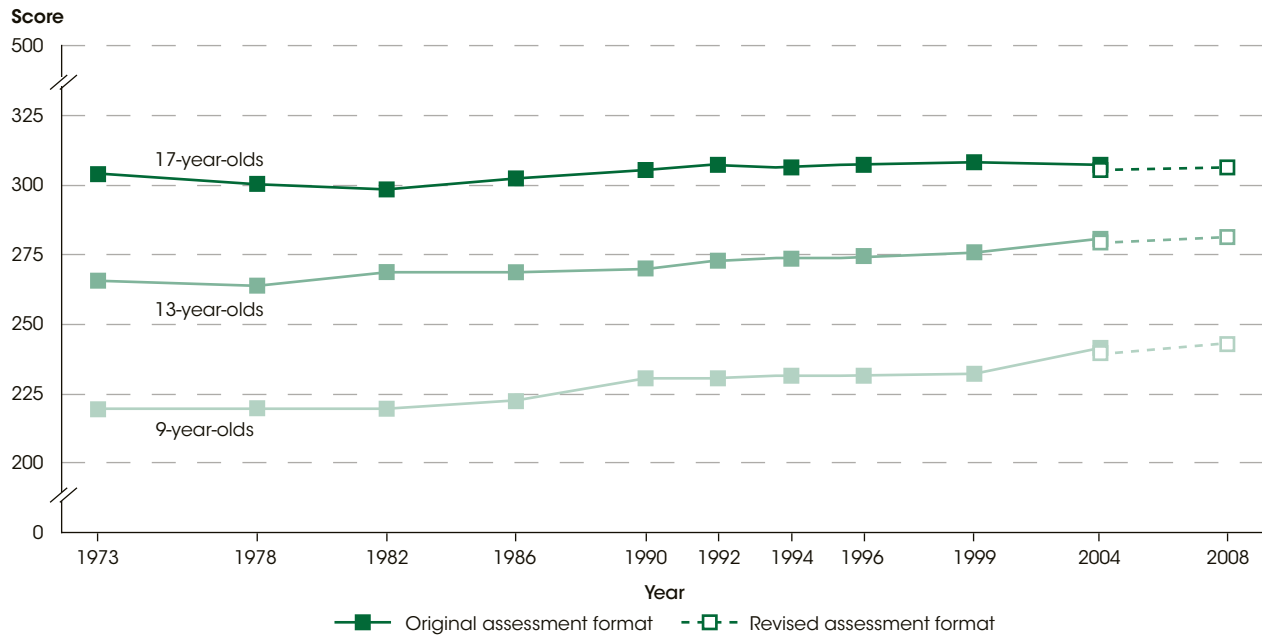
Figure 1. Average reading scale scores on the long-term trend National Assessment of Educational Progress (NAEP), by age: Selected years, 1971 through 2008



NOTE: Includes public and private schools. NAEP scores range from 0 to 500. Several administrative changes were initiated in the 2004 long-term trend assessment that have been carried forward to 2008, including allowing accommodations for students with disabilities and for English language learners. To ensure that any changes in scores were due to actual changes in student performance and not due to changes in the assessment itself, two assessments were conducted in 2004—one based on the previous assessment and one based on the modified assessment. In 2008, only the modified assessment was used. Scores from both assessments are shown for 2004; the results for all assessments prior to 2004 are labeled as the original assessment. The results for the modified 2004 and 2008 assessments are labeled as the revised assessment.
 SOURCE: Rampey, B.D., Dion, G.S., and Donahue, P.L. (2009). *NAEP 2008 Trends in Academic Progress in Reading and Mathematics* (NCES 2009-479). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education, Washington, DC. See *Digest of Education Statistics 2012*, table 140.

For more information, see the Reader's Guide and the Guide to Sources.

Figure 2. Average mathematics scale scores on the long-term trend National Assessment of Educational Progress (NAEP), by age: Selected years, 1973 through 2008



NOTE: Includes public and private schools. NAEP scores range from 0 to 500. Several administrative changes were initiated in the 2004 long-term trend assessment that have been carried forward to 2008, including allowing accommodations for students with disabilities and for English language learners. To ensure that any changes in scores were due to actual changes in student performance and not due to changes in the assessment itself, two assessments were conducted in 2004—one based on the previous assessment and one based on the modified assessment. In 2008, only the modified assessment was used. Scores from both assessments are shown for 2004; the results for all assessments prior to 2004 are labeled as the original assessment. The results for the modified 2004 and 2008 assessments are labeled as the revised assessment.
SOURCE: Rampey, B.D., Dion, G.S., and Donahue, P.L. (2009). *NAEP 2008 Trends in Academic Progress in Reading and Mathematics* (NCES 2009-479). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education, Washington, DC. See *Digest of Education Statistics 2012*, table 157.

NAEP long-term trend results indicate that the average reading and mathematics achievement of 9- and 13-year-olds improved between the early 1970s and 2008. In reading, 9-year-olds scored higher in 2008 than in any previous assessment year, scoring 4 points higher than in 2004 and 12 points higher than in 1971. The average reading score for 13-year-olds was higher in 2008 than in both 2004 and 1971, but the 2008 score was not significantly different from the scores in 1980, 1988, and any test years from 1992 through 1999. In mathematics, the average scores for 9- and 13-year-olds were higher in 2008 than in all previous assessment years. The 2008 average mathematics score for 9-year-olds showed a 4-point increase over the 2004 score and a 24-point increase over the 1973 score. Thirteen-year-olds scored 3 points higher in 2008 than in 2004 and 15 points higher in 2008 than in 1973 in mathematics.

The average performance of 17-year-olds on the 2008 reading and mathematics assessments was not measurably different from their performance in the early 1970s. The average reading score for 17-year-olds was higher in 2008 than in 2004 but was not significantly different from the score in 1971. In mathematics, the average score for 17-year-olds in 2008 was not significantly different from the scores in either 2004 or 1973.

White, Black, and Hispanic 9-year-olds had higher average reading scores in 2008 than they had in previous assessments. The average reading score for White 9-year-old students was 14 points higher in 2008 than in 1971, the reading score for Black 9-year-old students was 34 points higher in 2008 than in 1971, and the reading score for Hispanic 9-year-old students was 25 points higher in 2008 than in 1975. Between 1971 and 2008, White 13-year-olds had a 7-point gain, and Black students showed a 25-point gain. Between 1971 and 2008, White 17-year-old students showed a gain of 4 points, while Black students showed a gain of 28 points. At ages 13 and 17, Hispanic student scores were higher in 2008 than in 1975. Scores for Hispanics increased between 1975 and 2008 by 10 points at age 13 and by 17 points at age 17.

Between 2004 and 2008, average reading scores increased for 9-year-olds across racial/ethnic groups. The average reading score for White 9-year-olds was 4 points higher in 2008 than in 2004, the reading score for Black 9-year-old students was 7 points higher in 2008 than in 2004, and the reading score for Hispanic 9-year-old students was 8 points higher in 2008 than in 2004. Between 2004 and 2008, White 13-year-olds had a 4-point gain, and Black students showed an 8-point gain. At age 17, only White students showed a significant increase (7 points) during this period.

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In comparison to average mathematics scores in 1973, mathematics scores for 9-year-olds in 2008 were 25 points higher for White students, 34 points higher for Black students, and 32 points higher for Hispanic students. Between 1973 and 2008, White 13-year-olds gained 16 points, compared with a 34-point gain for Black 13-year-olds and a 29-point gain for Hispanic 13-year-olds. Similarly, the score for White 17-year-olds increased

4 points between 1973 and 2008, the score for Black students increased 17 points, and the score for Hispanic students increased 16 points.

In contrast to the increases in mathematics scores noted over the longer period from 1971 to 2008, only White 9-year-olds showed a significant increase (5 points) between 2004 and 2008.

Reference tables: *Digest of Education Statistics 2012*, tables 140, 157