

The Condition of Education 2009

Indicator 14

Reading and Mathematics Score Trends

The indicator and corresponding tables are taken directly from *The Condition of Education 2009*. Therefore, the page numbers may not be sequential.

Additional information about the survey data and supplementary notes can be found in the full report. For a copy of *The Condition of Education 2009*, visit the NCES website (<http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2009081>) or contact ED PUBS at 1-877-4ED-PUBS.

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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; scores for 17-year-olds were not measurably different over the same period.

The long-term trend National Assessment of Educational Progress (NAEP) has provided information on the reading and mathematics achievement of 9-, 13-, and 17-year-olds in the United States every 2 to 5 years since 1971 for reading and 1973 for mathematics. Since 1990, reading and mathematics have been administered in the same years. These results may differ from the main NAEP results presented in *indicators 12 and 13* since the content of the long-term trend assessment is intended to measure the same knowledge and skills to allow for comparisons over a long period of time, while the main NAEP undergoes changes periodically to reflect current curricula and emerging standards (see *supplemental note 4*). 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. Both scores are shown for 2004 with the results for all assessments prior to 2004 labeled as the original assessment. The results for the modified 2004 and 2008 assessments were labeled as the revised assessment.

NAEP long-term trend results indicate that the reading and mathematics achievement of 9- and 13-year-olds improved between the early 1970s and 2008 (see tables A-14-1 and A-14-2). 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 in 2008 was higher than that in both 2004 and 1971, but the 2008 score was not significantly different from some of the scores in the intervening assessment years. 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 was 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 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 and Black 9-year-olds had higher average reading scores in 2008 than they had in all previous assessment years. The 2008 average reading score for 9-year-old White students was 14 points higher in 2008 than in 1971, and the 2008 reading score for Black students was 34 points higher in 2008 than in 1971. At age 13, White and Black students had higher reading scores in 2008 than in 2004 and 1971. Between 1971 and 2008, White students showed a 7-point gain and Black students showed a 25-point gain. At age 17, the average reading score increased for White students from 2004 to 2008 but showed no significant change for Black students over this period. Between 1971 and 2008, White 17-year-old students showed a gain of 4 points, while Blacks showed a gain of 28 points. The average reading score for Hispanic 9-year-olds was higher in 2008 than in all previous assessment years. Hispanic students at ages 13 and 17 scored higher in reading in 2008 than in 1975.

At age 9, the average mathematics score increased from 2004 to 2008 for White students but showed no significant change for Black students. In comparison to mathematics scores in 1973, mathematics scores in 2008 were 25 points higher for White 9-year-olds and 34 points higher for Black 9-year-olds. At age 13, neither White nor Black students' mathematics scores showed a significant change from 2004 to 2008. However, from 1973 to 2008, White 13-year-olds gained 16 points, compared to a 34-point gain for Black 13-year-olds. Similarly, at age 17, neither White nor Black students' scores showed a significant change between 2004 and 2008, whereas between 1973 and 2008, the score for White students increased 4 points and the score for Black students increased 17 points. At each age, there was no significant change in mathematics scores for Hispanic students from 2004 to 2008, but their scores did increase between 1973 and 2008.



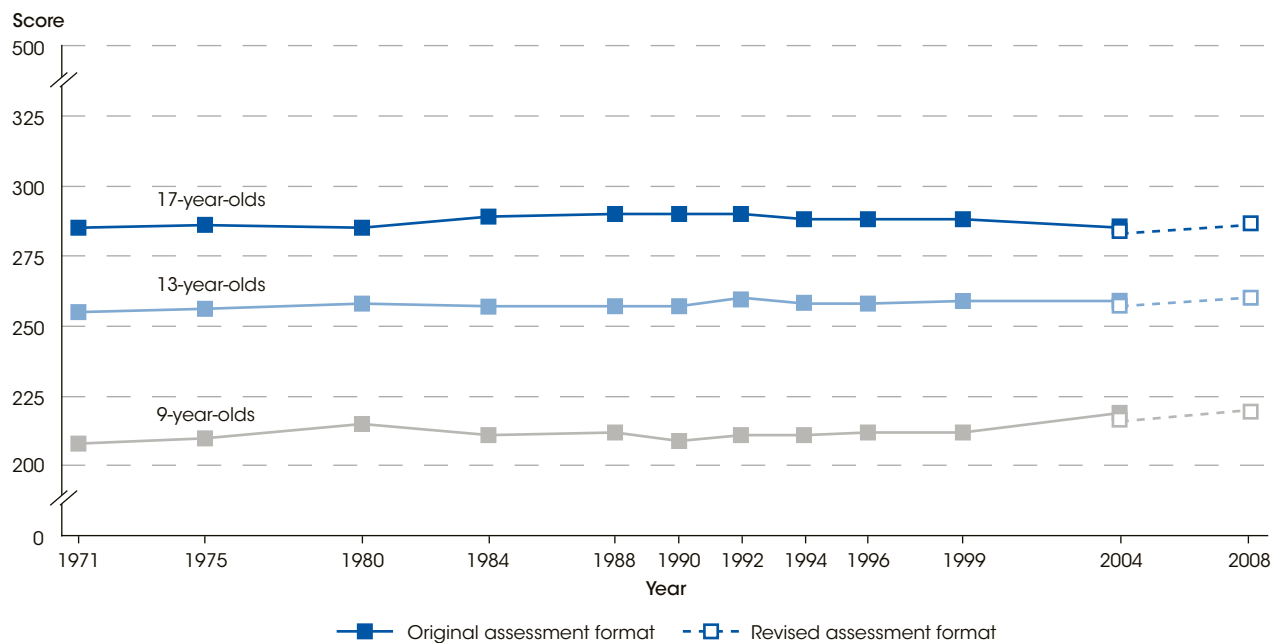
For more information: *Tables A-14-1 and A-14-2; Indicators 12 and 13*

Technical Notes

The long-term trend NAEP score ranges from 0 to 500. Scores include both public and private school students. Score-point changes are based on the difference of unrounded scores, as opposed to the rounded scores shown in the figures. Race categories exclude persons of

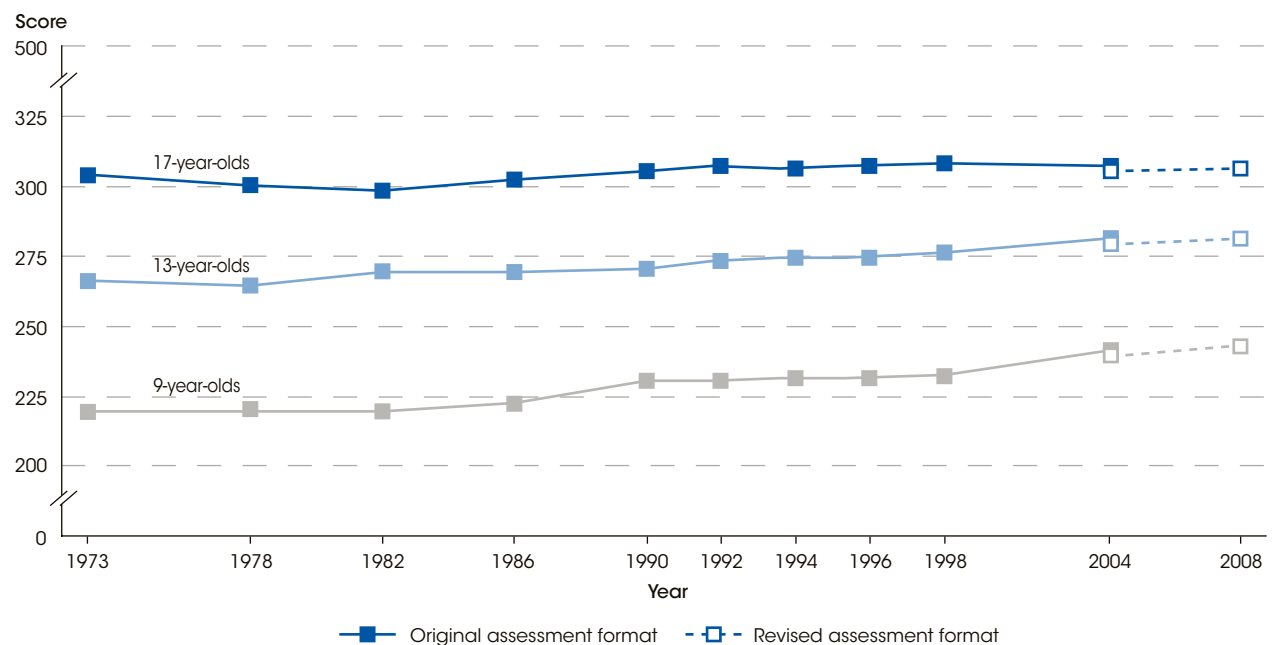
Hispanic ethnicity. All comparisons referring to 2004 are based on the revised assessment scores. For more information on race/ethnicity, see *supplemental note 1*; for more information on NAEP, see *supplemental note 4*.

Figure 14-1. Average reading scale scores on the long-term trend National Assessment of Educational Progress (NAEP), by age: Various years, 1971 through 2008



NOTE: Includes public and private schools. NAEP scores range from 0 to 500. Scores for the revised assessment format reflect the inclusion of and accommodations for students with disabilities and English language learners. For more information on NAEP see *supplemental note 4*. 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.

Figure 14-2. Average mathematics scale scores on the long-term trend National Assessment of Educational Progress (NAEP), by age: Various years, 1973 through 2008



NOTE: Includes public and private schools. NAEP scores range from 0 to 500. Scores for the revised assessment format reflect the inclusion of and accommodations for students with disabilities and English language learners. For more information on NAEP see *supplemental note 4*. 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.

Reading and Mathematics Score Trends

Table A-14-1. Average reading scale scores on the long-term trend National Assessment of Educational Progress (NAEP), by age, sex, and race/ethnicity: Various years, 1971 through 2008

Age, sex, and race/ethnicity	1971	1975	1980	1984	1988	1990	1992	1994	1996	1999	2004	2004 ¹	2008 ¹
9-year-old total	208	210	215	211	212	209	211	211	212	212	219	216	220
Sex													
Male	201	204	210	207	207	204	206	207	207	209	216	212	216
Female	214	216	220	214	216	215	215	215	218	215	221	219	224
Race/ethnicity													
White	214	217	221	218	218	217	218	218	220	221	226	224	228
Black	170	181	189	186	189	182	185	185	191	186	200	197	204
Hispanic	—	183	190	187	194	189	192	186	195	193	205	199	207
13-year-old total	255	256	258	257	257	257	260	258	258	259	259	257	260
Sex													
Male	250	250	254	253	252	251	254	251	251	254	254	252	256
Female	261	262	263	262	263	263	265	266	264	265	264	262	264
Race/ethnicity													
White	261	262	264	263	261	262	266	265	266	267	266	265	268
Black	222	226	233	236	243	241	238	234	234	238	244	239	247
Hispanic	—	232	237	240	240	238	239	235	238	244	242	241	242
17-year-old total	285	286	285	289	290	290	290	288	288	288	285	283	286
Sex													
Male	279	280	282	284	286	284	284	282	281	281	278	276	280
Female	291	291	289	294	294	296	296	295	295	295	292	289	291
Race/ethnicity													
White	291	293	293	295	295	297	297	296	295	295	293	289	295
Black	239	241	243	264	274	267	261	266	266	264	264	262	266
Hispanic	—	252	261	268	271	275	271	263	265	271	264	267	269

— Not available.

¹ Scores for the revised assessment format. This format reflects the inclusion of and accommodations for students with disabilities and English language learners.

NOTE: Includes public and private schools. Race categories exclude persons of Hispanic ethnicity. Totals include other race/ethnicity categories not separately shown. NAEP scores range from 0 to 500. For more information on race/ethnicity, see *supplemental note 1*; for more information on NAEP, see *supplemental note 4*.

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.

Table A-14-2. Average mathematics scale scores on the long-term trend National Assessment of Educational Progress (NAEP), by age, sex, and race/ethnicity: Various years, 1973 through 2008

Age, sex, and race/ethnicity	1973	1978	1982	1986	1990	1992	1994	1996	1999	2004	2004 ¹	2008 ¹
9-year-old total	219	219	219	222	230	230	231	231	232	241	239	243
Sex												
Male	218	217	217	222	229	231	232	233	233	243	240	242
Female	220	220	221	222	230	228	230	229	231	240	239	243
Race/ethnicity												
White	225	224	224	227	235	235	237	237	239	247	245	250
Black	190	192	195	202	208	208	212	212	211	224	221	224
Hispanic	202	203	204	205	214	212	210	215	213	230	229	234
13-year-old total	266	264	269	269	270	273	274	274	276	281	279	281
Sex												
Male	265	264	269	270	271	274	276	276	277	283	279	284
Female	267	265	268	268	270	272	273	272	274	279	278	279
Race/ethnicity												
White	274	272	274	274	276	279	281	281	283	288	287	290
Black	228	230	240	249	249	250	252	252	251	262	257	262
Hispanic	239	238	252	254	255	259	256	256	259	265	264	268
17-year-old total	304	300	298	302	305	307	306	307	308	307	305	306
Sex												
Male	309	304	301	305	306	309	309	310	310	308	307	309
Female	301	297	296	299	303	305	304	305	307	305	304	303
Race/ethnicity												
White	310	306	304	308	309	312	312	313	315	313	311	314
Black	270	268	272	279	289	286	286	286	283	285	284	287
Hispanic	277	276	277	283	284	292	291	292	293	289	292	293

¹ Scores for the revised assessment format. This format reflects the inclusion of and accommodations for students with disabilities and English language learners.

NOTE: Includes public and private schools. Race categories exclude persons of Hispanic ethnicity. Totals include other race/ethnicity categories not separately shown. NAEP scores range from 0 to 500. For more information on race/ethnicity, see *supplemental note 1*; for more information on NAEP, see *supplemental note 4*.

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.

Reading and Mathematics Score Trends

Table S-14-1. Standard errors for the average reading scale scores on the long-term trend National Assessment of Educational Progress (NAEP), by age, sex, and race/ethnicity: Various years, 1971 through 2008

Age, sex, and race/ethnicity	1971	1975	1980	1984	1988	1990	1992	1994	1996	1999	2004	2004 ¹	2008 ¹
9-year-old total	1.0	0.7	1.0	0.8	1.1	1.2	0.9	1.2	1.0	1.3	1.1	1.0	0.9
Sex													
Male	1.1	0.8	1.1	1.0	1.4	1.7	1.3	1.3	1.4	1.6	1.4	1.1	1.1
Female	1.0	0.8	1.1	0.9	1.3	1.2	0.9	1.4	1.1	1.5	1.0	1.1	0.9
Race/ethnicity													
White	0.9	0.7	0.8	0.9	1.4	1.3	1.0	1.3	1.2	1.6	1.1	0.9	1.0
Black	1.7	1.2	1.8	1.3	2.4	2.9	2.2	2.3	2.6	2.3	2.2	1.8	1.7
Hispanic	†	2.2	2.3	3.0	3.5	2.3	3.1	3.9	3.4	2.7	1.7	1.5	1.5
13-year-old total	0.9	0.8	0.9	0.6	1.0	0.8	1.2	0.9	1.0	1.0	1.0	1.0	0.8
Sex													
Male	1.0	0.8	1.1	0.7	1.3	1.1	1.7	1.2	1.2	1.3	1.2	1.1	1.0
Female	0.9	0.9	0.9	0.7	1.0	1.1	1.2	1.2	1.2	1.2	1.3	1.2	0.9
Race/ethnicity													
White	0.7	0.7	0.7	0.6	1.1	0.9	1.2	1.1	1.0	1.2	1.0	1.0	1.0
Black	1.2	1.2	1.5	1.2	2.4	2.2	2.3	2.4	2.6	2.4	2.0	1.9	1.6
Hispanic	†	3.0	2.0	2.0	3.5	2.3	3.5	1.9	2.9	2.9	1.6	2.1	1.5
17-year-old total	1.2	0.8	1.2	0.8	1.0	1.1	1.1	1.3	1.1	1.3	1.2	1.1	0.9
Sex													
Male	1.2	1.0	1.3	0.8	1.5	1.6	1.6	2.2	1.3	1.6	1.5	1.4	1.1
Female	1.3	1.0	1.2	0.9	1.5	1.2	1.1	1.5	1.2	1.4	1.3	1.2	1.0
Race/ethnicity													
White	1.0	0.6	0.9	0.9	1.2	1.2	1.4	1.5	1.2	1.4	1.1	1.2	1.0
Black	1.7	2.0	1.8	1.2	2.4	2.3	2.1	3.9	2.7	1.7	2.7	1.9	2.4
Hispanic	†	3.6	2.7	2.9	4.3	3.6	3.7	4.9	4.1	3.9	2.9	2.5	1.3

† Not applicable.

¹ Scores for the revised assessment format. This format reflects the inclusion of and accommodations for students with disabilities and English language learners.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.

Table S-14-2. Standard errors for the average mathematics scale scores on the long-term trend National Assessment of Educational Progress (NAEP), by age, sex, and race/ethnicity: Various years, 1973 through 2008

Age, sex, and race/ethnicity	1973	1978	1982	1986	1990	1992	1994	1996	1999	2004	2004 ¹	2008 ¹
9-year-old total	0.8	0.8	1.1	1.0	0.8	0.8	0.8	0.8	0.8	0.9	0.9	0.8
Sex												
Male	0.7	0.7	1.2	1.1	0.9	1.0	1.0	1.2	1.0	1.1	1.0	0.9
Female	1.1	1.0	1.2	1.2	1.1	1.0	0.9	0.7	0.9	1.1	1.0	1.0
Race/ethnicity												
White	1.0	0.9	1.1	1.1	0.8	0.8	1.0	1.0	0.9	0.9	0.8	0.8
Black	1.8	1.1	1.6	1.6	2.2	2.0	1.6	1.4	1.6	2.1	2.1	1.9
Hispanic	2.4	2.2	1.3	2.1	2.1	2.3	2.3	1.7	1.9	2.0	2.0	1.2
13-year-old total	1.1	1.1	1.1	1.2	0.9	0.9	1.0	0.8	0.8	1.0	1.0	0.9
Sex												
Male	1.3	1.3	1.4	1.1	1.2	1.1	1.3	0.9	0.9	1.2	1.0	1.0
Female	1.1	1.1	1.1	1.5	0.9	1.0	1.0	1.0	1.1	1.0	1.2	1.0
Race/ethnicity												
White	0.9	0.8	1.0	1.3	1.1	0.9	0.9	0.9	0.8	0.9	0.9	1.2
Black	1.9	1.9	1.6	2.3	2.3	1.9	3.5	1.3	2.6	1.6	1.8	1.2
Hispanic	2.2	2.0	1.7	2.9	1.8	1.8	1.9	1.6	1.7	2.0	1.5	1.2
17-year-old total	1.1	1.0	0.9	0.9	0.9	0.9	1.0	1.2	1.0	0.8	0.7	0.6
Sex												
Male	1.2	1.0	1.0	1.2	1.1	1.1	1.4	1.3	1.4	1.0	0.9	0.7
Female	1.1	1.0	1.0	1.0	1.1	1.1	1.1	1.4	1.0	0.9	0.8	0.8
Race/ethnicity												
White	1.1	0.9	0.9	1.0	1.0	0.8	1.1	1.4	1.1	0.7	0.7	0.7
Black	1.3	1.3	1.2	2.1	2.8	2.2	1.8	1.7	1.5	1.6	1.4	1.2
Hispanic	2.2	2.3	1.8	2.9	2.9	2.6	3.7	2.1	2.5	1.8	1.2	1.1

¹ Scores for the revised assessment format. This format reflects the inclusion of and accommodations for students with disabilities and English language learners.

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.