

Procedural Appendix

Overview of Procedures Used in the 1996 NAEP Trend Assessments

This appendix provides information about the methods and procedures used in NAEP's 1996 science, mathematics, and reading trend assessments. The *NAEP 1996 Technical Report* contains more extensive information about these procedures. Although a trend assessment in writing was also conducted in 1996, the methods and procedures used in that assessment are not provided here. The 1996 trend writing assessment results are being examined and reanalyzed; they will be released at a future date, along with a description of methods and procedures.

This NAEP trend report is based on results from nine science assessments, eight mathematics assessments, and nine reading assessments, with the most recent assessment in each of the three curriculum areas having been conducted during the 1995-96 school year. NAEP also conducted various cross-sectional (or “main”) assessments and state assessments in 1996. In addition, “main” assessments separate from the trend assessment have occurred in each of the three curriculum areas during the late 1980s and early 1990s. These “main” assessments measured somewhat different aspects of the content areas than the trend assessments that were administered during those years. In some cases, the main assessments have been administered in more than one year, and results from the different administrations have been compared to one another, providing short-term trend comparisons.¹ These short-term trend comparisons were based on different frameworks and content specifications from those used for the long-term trend assessments. For each of the three curriculum areas, the long-term trend comparisons described in this report are based on content specifications for the three curriculum areas that were essentially constant over the assessments described in this report. In fact, the trend assessment booklets used in 1996 were also used in the past few long-term trend assessments. Questions that were common to several assessments before the mid-1980s were included in these current assessment booklets. More information about the composition of each of the trend assessments is presented below.

¹ Reese, C. M., Miller, K. E., Mazzeo, J. & Dossey, J. A. (1997). *NAEP 1996 mathematics report card for the nation and the states*. National Center for Education Statistics. Washington, DC: U.S. Government Printing Office.

Campbell, J. R., Donahue, P. L. Reese, C. M. & Phillips, G. W. (1996). *NAEP 1994 reading report card for the nation and the states*. National Center for Education Statistics. Washington, DC: U.S. Government Printing Office.

Science

NAEP conducted trend assessments of the science achievement of in-school 9-, 13-, and 17-year-olds during the school years ending in 1970, 1973, 1977, 1982, 1986, 1990, 1992, 1994, and 1996. In the first assessment, the 17-year-olds were assessed during the spring of the school year ending in 1969, rather than 1970. For each of the other assessments, 13-year-olds were assessed in the fall, 9-year-olds were assessed in the winter, and 17-year-olds were assessed in the spring of the assessment school year. Identical assessment booklets, containing blocks of science, math, and background questions, were used in 1986, 1990, 1992, 1994, and 1996. The assessments were administered using an audiotape that guided the students through the assessment questions. The use of audiotape minimized the dependence of the science results on reading ability.

The science trend assessments measured student achievement based on assessment objectives developed by nationally representative panels of scientists, science educators, and concerned citizens. The objectives which formed the basis for the 1986, 1990, 1992, 1994, and 1996 trend assessments² replicated the objectives used in previous assessments. The objectives for each assessment prior to 1986 were based on the framework used for the previous assessment with some revisions that reflected changes in content and trends in school science. That is, the objectives for assessments prior to 1986 were not identical from assessment to assessment. Since 1986, the objectives have been identical from assessment to assessment. Although changes were made in the content of the assessment before 1990, some questions were retained from one assessment to the next in order to measure trends in achievement across time. This allows comparisons across all of the available assessments to be made. All of the trend assessments from 1977 onward contained enough common questions to put the results from these assessments on the same scale using item response theory (IRT) scaling. The 1970 and 1973 assessments had too few questions in common with subsequent assessments to have results put directly on the IRT scale; results from these assessments were placed on the trend scale using mean proportion correct for the common questions. (This is the reason that the data points from 1970 and 1973 presented in figures in this report are connected to data points from the other years using dashed lines, rather than solid lines.)

The 1996 science trend assessment contained 63 multiple-choice questions at age 9, 83 multiple-choice questions at age 13, and 82 multiple-choice questions at age 17. The assessment covered a range of science content areas, including topics from the life sciences, physical sciences, and earth and space sciences. Questions assessed students' abilities to understand basic scientific facts and principles, solve problems in scientific contexts, design experiments, interpret data and read tables and graphs, and understand the nature of science.

² National Assessment of Educational Progress (1986). *Science objectives: 1985-86 assessment*. Princeton, NJ: Educational Testing Service.

Mathematics

NAEP has assessed the mathematics achievement of in-school 9-, 13-, and 17-year-olds eight times: in the school years ending in 1973, 1978, 1982, 1986, 1990, 1992, 1994, and 1996. The trend assessment, which forms the basis of the results detailed in this report, uses procedures established in 1973. The assessments were presented in paced-tape administrations, and for each of the assessments, 13-year-olds were assessed in the fall, 9-year-olds were assessed in the winter, and 17-year-olds were assessed in the spring of the assessment school year. The same assessment booklets were used in 1986, 1990, 1992, 1994, and 1996; these booklets contained blocks of mathematics questions and blocks of science questions, as well as background questions.

The mathematics trend assessments contained a range of constructed-response and multiple-choice questions measuring performance on sets of objectives developed by nationally representative panels of mathematics specialists, educators, and other interested parties. The 1986, 1990, 1992, 1994, and 1996 assessments shared common objectives.³ The objectives for each assessment prior to 1990 were based on the framework used for the previous assessment with some revisions that reflected changes in the contents of mathematics education. Although changes were made from assessment to assessment before 1990, some questions were retained from one assessment to the next in order to measure trends in achievement across time. This allows comparisons across all of the available assessments, other than the 1973 assessment, to be made using IRT. Results from the 1973 assessment were placed on the same scale using mean proportion correct extrapolation.

The 1986, 1990, 1992, 1994, and 1996 mathematics trend assessments included 71 questions, including 28 constructed-response questions at age 9; 127 questions, including 27 constructed-response questions, at age 13; and 132 questions, including 29 constructed-response questions at age 17. The questions covered a range of content, including numbers and operations, measurement, geometry, and algebra. The process areas include knowledge, understanding, skills, applications, and problem solving.

³ National Assessment of Educational Progress (1986). *Math objectives: 1985-86 assessment*. Princeton, NJ: Educational Testing Service.

Reading

NAEP has assessed students' reading performance at age 9 or in grade 4, at age 13 or in grade 8, and at age 17 or in grade 11 in nine reading assessments conducted during the school years ending 1971, 1975, 1980, 1984, 1988, 1990, 1992, 1994, and 1996. For each assessment, 13-year-olds and eighth graders were assessed in the fall, 9-year-olds and fourth graders were assessed in the winter, and 17-year-olds and eleventh graders were assessed in the spring of the assessment school year. Because data from both the age samples and the grade samples were used to establish the reading trend scale in 1986 when scaling of the trend assessments was first done, this practice has been replicated in all subsequent trend assessments. Results reported in this document, however, are results for the 9-, 13-, and 17-year-olds assessed each year. The same assessment booklets, containing blocks of reading, writing, and background questions, were used in 1984, 1988, 1990, 1992, 1994, and 1996. The assessments since 1984 were administered in printed form; previous to that time the assessments were paced using audiotapes. In 1984, the assessment was administered in both modes.

The reading tasks required students to read and answer questions based on a variety of materials, including informational passages, literary text, and documents. Although some tasks required students to provide written responses, most questions were multiple-choice questions. The assessment was designed to evaluate students' ability to locate specific information, make inferences based on information in two or more parts of a passage, or identify the main idea in a passage. For the most part, these questions measured students' ability to read either for specific information or for general understanding. Although the reading assessments conducted through the 1970s underwent some changes from test administration to administration, the set of reading passages and questions included in the trend assessments has been kept essentially the same since 1984, and most closely reflects the objectives developed for that assessment.⁴ The reading trend assessment administered at age 9/grade 4 included 45 passages and 105 questions, including eight that required students to construct written responses. At age 13/grade 8, the assessment included 43 passages and 107 questions, seven of them requiring constructed responses. At age 17/grade 11, the assessment contained 36 passages and 95 questions, eight of them requiring constructed responses.

⁴ National Assessment of Educational Progress (1984). *Reading objectives: 1983-84 assessment*. Princeton, NJ: Educational Testing Service.

The Design of the Science and Mathematics Trend Assessments

At each of the three ages assessed, both the science and mathematics trend assessments consisted of three different 15-minute segments or “blocks” of content questions. Each also contained a small set of background questions that pertained to students’ experiences and instruction related to the particular subject area being assessed (i.e., either science or mathematics).

The blocks were assembled three to a booklet, together with a general background questionnaire that was common to all booklets. This questionnaire included questions about demographic information as well as home environment.

At ages 9 and 13, the blocks were placed in three booklets, each containing one block of mathematics questions, one block of science questions, and one block of reading questions. The reading block in these booklets is not used in the reading trend assessment, but is included in order to preserve the context of the science and mathematics questions. To replicate procedures established in 1986, at age 17, two booklets were administered. One contained two mathematics blocks and one science block, while the other contained two science blocks and one mathematics block.

At all three ages, the science and mathematics questions were administered using a paced audiotape. The tape recording that accompanied the booklets standardized timing and was intended to help students with any difficulty they might have in reading the questions. Thus, in an administration session, all students were being paced through the same booklet.

The Design of the Reading Trend Assessment

The reading trend assessment consisted of ten 15-minute blocks of reading passages and questions at each of the three age/grade levels. In addition, each block contained a short set of background questions. The background questions in the reading blocks pertained to students’ reading habits and experiences.

In keeping with procedures established with the 1984 reading and writing trend assessments, the reading and writing blocks were assembled into six booklets at each age/grade assessed. Each student participating in the reading and writing assessments received a booklet containing three content blocks as well as a six-minute section of general background questions about demographic information and the students’ home environment.⁵

⁵ The 1996 writing trend assessment results will be rereleased at a future date.

Sampling and Data Collection

Sampling and data collection activities for the 1996 trend assessments were conducted by Westat, Inc. Based on procedures used since the inception of NAEP, the data collection schedule was 13-year-olds/eighth graders in the fall (October to December, 1995), 9-year-olds/fourth graders in the winter (January to mid-March, 1996), and 17-year-olds/eleventh graders in the spring (mid-March to May, 1996). Although only 9-, 13-, and 17-year-olds were assessed in science and mathematics, both age- and grade-eligible students were assessed in reading. Age eligibility was defined by calendar year for 9- and 13-year olds, while the birth date range for 17-year-olds was from October, 1978 through September 30, 1979.

As with all NAEP national assessments, students attending both public and nonpublic schools were selected for participation based on a stratified, three-stage sampling plan. The first stage included defining geographic primary sampling units (PSUs), which are typically groups of contiguous counties, but sometimes a single county; classifying the PSUs into strata defined by region and community type; then selecting PSUs with probability proportional to size. In the second stage, both public and nonpublic schools are selected within each PSU that was selected at the first stage. The third stage involved randomly selecting students within a school for participation. A small number of students selected for participation were excluded because of limited English proficiency or severe disability.

The student sample sizes for the trend assessments as well as the school and student participation rates are presented in the following tables. The numbers in the tables are based on the full age/grade samples of students, when the age/grade samples were collected. Students within schools were randomly assigned to either mathematics/science or reading/writing assessment sessions subsequent to their selection for participation in the 1996 assessments. Student sample sizes appear in Tables P.1, P.3, and P.5. School and student participation rates are shown in Tables P.2, P.4, and P.6. These rates are included in individual tables for each subject area for convenience in comparing across assessment years, although the rates are common for the math and science samples and for the reading sample for many assessment years. For assessments conducted prior to 1984, the school and student participation rates were obtained from the Public Use Data Tape User Guides. Figures for more recent assessments were obtained from the reports on the NAEP field operation and data collection activities, prepared by Westat, Inc. Although sampled schools that refused to participate were replaced, school cooperation rates were computed based on the schools originally selected for participation in the assessments. The student participation rates represent the percentage of students assessed of those invited to be assessed, including in follow-up sessions when necessary.

Table P.1	Student Sample Sizes for the Science Trend Scoring							
	1977	1982	1986	1990	1992	1994	1996	
Age 9	17,345	1,960	6,932	6,235	7,335	5,663	5,414	
Age 13	25,653	7,873	6,200	6,649	5,909	6,052	5,658	
Age 17 (in school)	31,436	7,974	3,868	4,411	4,359	3,813	3,539	
TOTAL	74,434	17,817	17,000	17,295	17,603	15,528	14,611	

Table P.2	School and Student Participation Rates for the Science Trend Assessments			
	Age	Weighted Percentage of Schools Participating	Weighted Percentage of Students Participating	
1970	9	–	88.0	
	13	–	85.6	
	17	–	74.5	
1973	9	93.9	91.0	
	13	93.8	84.6	
	17	92.4	73.6	
1977	9	91.5	88.6	
	13	91.3	86.2	
	17	89.5	73.1	
1982	9	88.3	90.5	
	13	89.2	85.5	
	17	86.5	74.2	
1986	9	88.7	92.9	
	13	88.1	89.2	
	17	82.7	78.9	
1990	9	87.0	92.5	
	13	89.0	90.2	
	17	79.0	82.1	
1992	9	87.8	94.4	
	13	85.6	90.9	
	17	81.0	82.3	
1994	9	87.1	94.4	
	13	80.4	92.3	
	17	79.5	84.8	
1996	9	82.6	95.4	
	13	80.8	92.6	
	17	75.6	84.1	

Table P.3		Student Sample Sizes for the Mathematics Trend Scaling						
		1978	1982	1986	1990	1992	1994	1996
Age 9		14,752	12,038	6,932	6,235	7,335	5,663	5,414
Age 13		24,209	15,758	6,200	6,649	5,909	6,052	5,658
Age 17 (in school)		26,756	16,319	3,868	4,411	4,359	3,813	3,539
TOTAL		65,717	44,115	17,000	17,295	17,603	15,528	14,611

Table P.4		School and Student Participation Rates for the Mathematics Trend Assessments			
	Age	Weighted Percentage of Schools Participating	Weighted Percentage of Students Participating		
1973	9	93.9	90.9		
	13	93.8	84.2		
	17	92.4	73.5		
1978	9	91.5	87.2		
	13	91.5	85.2		
	17	89.5	73.2		
1982	9	88.3	90.5		
	13	89.2	85.5		
	17	86.5	74.2		
1986	9	88.7	92.9		
	13	88.1	89.2		
	17	82.7	78.9		
1990	9	87.0	92.5		
	13	89.0	90.2		
	17	79.0	82.1		
1992	9	87.8	94.4		
	13	85.6	90.9		
	17	81.0	82.3		
1994	9	87.1	94.4		
	13	80.4	92.3		
	17	79.5	84.8		
1996	9	82.6	95.4		
	13	80.8	92.6		
	17	75.6	84.1		

Table P.5**Student Sample Sizes for the Reading Trend Scoring**

	1971	1975	1980	1984	1988	1990	1992	1994	1996
Age 9	23,201	21,697	21,159	22,291	3,782	4,268	4,944	5,335	5,019
Age 13	25,545	21,393	22,530	22,693	4,005	4,609	3,965	5,547	5,493
Age 17 (in school)	23,661	19,624	18,103	25,193	3,652	4,383	4,447	4,840	4,669
TOTAL	72,407	62,714	61,592	70,177	11,439	13,260	13,356	15,722	15,181

Table P.6**School and Student Participation Rates for the Reading Trend Assessments**

	Age	Weighted Percentage of Schools Participating	Weighted Percentage of Students Participating
1971	9	92.5	90.9
	13	92.0	84.2
	17	90.5	73.5
1975	9	93.9	87.2
	13	92.8	85.2
	17	91.0	73.2
1980	9	94.5	90.5
	13	93.2	85.5
	17	90.5	74.2
1984	9	88.6	92.9
	13	90.3	89.2
	17	83.9	78.9
1988	9	87.2	92.5
	13	92.7	90.2
	17	78.1	82.1
1990	9	87.0	92.5
	13	89.0	90.2
	17	79.0	82.1
1992	9	87.0	93.8
	13	85.3	90.8
	17	80.9	83.3
1994	9	86.7	94.1
	13	79.7	91.8
	17	80.1	84.2
1996	9	83.5	95.6
	13	82.0	92.2
	17	81.7	83.8

Scoring the Booklets

Materials from NAEP 1996 assessments, including the trend assessments, were shipped to National Computer Systems (NCS) in Iowa City, Iowa, for processing. Receipt and quality control were managed through a sophisticated bar-coding and tracking system. After all appropriate materials were received from a school, they were forwarded to the professional scoring area, where the responses to constructed-response questions were evaluated by trained staff using guidelines prepared by NAEP. Each constructed-response question had a unique scoring guide that defined the criteria to be used in evaluating students' responses. Subsequent to the professional scoring, the booklets were scanned, and all information was transcribed to the NAEP database at ETS. Each processing activity was conducted with rigorous quality control. An overview of the professional scoring for mathematics and reading follows. (No constructed-response questions were scored for science.)

Scoring the Mathematics Constructed-Response Questions

Most of the constructed-response mathematics trend questions were scored on a correct/incorrect basis. The scoring guides identified the correct or acceptable answers for each question in each block. The scores for these questions included a 0 for no response, a 1 for a correct answer, or a 2 for an incorrect or "I don't know" response. Because of the straightforward nature of the scoring, lengthy training was not required. In an orientation period, the readers were trained to follow the procedures for scoring the mathematics questions and given an opportunity to become familiar with the scoring guides, which listed the correct answer for the questions in each of the blocks.

During the scoring, every tenth booklet in a session was scored by a second reader to provide a quality check. These quality checks were recorded on a separate sheet with the few discrepancies noted, and the scores were corrected. For the most part, the discrepancies were due to a score not being coded for a response to a question.

Scoring the Reading Constructed-Response Questions

The 1996 reading trend assessment included eight questions at age 9 for which students were required to construct written responses, seven such questions at age 13, and eight such questions at age 17. Some of the questions were administered to more than one age group of students.

The scoring guides for the constructed-response reading questions focused on students' ability to perform various reading tasks — for example, identifying the author's message or mood and substantiating their interpretations, making predictions based on given details, supporting an interpretation, and comparing and contrasting information.

The scoring guides for the reading questions varied somewhat, but typically included the distribution of score points shown below.

Outline for Scoring of Constructed-Response Reading Trend Assessment Question	
	
Rating Category	
4	ELABORATED REFERENCE OR INTERPRETATION. These responses exceeded the requirements of the task by including illustrative examples or details and demonstrating a high level of cohesiveness.
3	SATISFACTORY REFERENCE OR INTERPRETATION. These responses identified at least two relevant examples or reasons to support a given interpretation.
2	MINIMAL REFERENCE OR INTERPRETATION. These responses did not provide evidence to support a stated interpretation.
1	UNSATISFACTORY REFERENCE OR INTERPRETATION. These responses did not provide an interpretation, but instead digressed or avoided the task.
0, 7, 8, 9	These responses were, respectively, blank, indecipherable, completely off-task, or included a statement to the effect that the student did not know how to do the task. (In the analysis, scores of 7, 8, and 9 were collapsed into the score point of 9.)

Some of the scoring guides included secondary scores, which typically involved categorizing the kind of evidence or details the student used as support for an interpretation. The document literacy tasks, most of which required short answers, were scored on a correct/incorrect basis.

The training program for the reading trend assessment scoring was carried out on all assessment questions one at a time for each age group and covered the range of student responses. Because the purpose of the scoring was to measure trends from the 1984 assessment, preparation for training included rereading hundreds of 1984 responses and compiling training sets. In order to ensure continuity with the past scoring of the trend questions, at least half of the sample papers in the training sets were taken from the 1984 training sets, and previously scored 1984 booklets were masked to ensure that scoring for training and the subsequent trend reliability scoring would be done without knowledge of the previous scores given.

The actual training was conducted by ETS staff assisted by NCS's scoring director and team leaders. Training began with each reader receiving a photocopied packet of materials consisting of a scoring guide, a set of 15 to 20 scored samples, and an additional 20 to 40 response samples to be scored. The trainers reviewed the scoring guide, explained all the applicable score points, and elaborated on the rationale used to arrive at a particular score. The readers then reviewed the 15 to 20 scored samples, as the trainers clarified and elaborated on the scoring guide. After this explanation, the additional samples were scored and discussed until the readers were in agreement. If necessary, additional packets of 1984 responses were used for practice scoring.

As a further step to achieve reliability with 1984, a 25 percent sample of the 1984 responses was scored on separate scoring sheets following the formal training session. These sheets were key entered, and a computerized report was generated comparing the new scores with those assigned in 1984. After some further discussion, scoring of the 1996 responses began. Three reliability studies were conducted as part of this scoring. For the 1996 material, 25 percent of the constructed responses were scored by a second reader to produce interreader reliability statistics. In addition, a trend reliability study was conducted by rereading 20 percent of the 1984 responses. Finally, a trend reliability study was conducted by rereading 20 percent of the 1994 responses. The reliability information from these studies is shown in Table P.7.

	Percent Exact Agreement Between Readers: Reading Trend Assessment Scoring					
	1984 Responses Rescored in 1996		1994 Responses Rescored in 1996		1996 Responses Scored Twice	
	Mean Percent Agreement	Range of Agreement	Mean Percent Agreement	Range of Agreement	Mean Percent Agreement	Range of Agreement
Age 9	87.6	83.3-93.4	90.6	87.9-91.9	92.1	87.0-95.1
Age 13	85.5	83.0-89.7	70.7	64.8-75.1	89.9	86.7-93.9
Age 17	83.3	74.4-87.7	79.2	74.5-83.8	89.5	82.8-95.2

Note: The reading scoring was generally based on 5 scoring categories.

Data Analysis and IRT Scaling

After the assessment information had been compiled in the NAEP database, the data were weighted according to the sample design and the population structure. The weighting for the samples reflected the probability of selection for each student as a result of the sampling design, adjusted for nonresponse. Through poststratification, the weighting assured that the representation of certain subpopulations corresponded to figures from the U.S. Census and the Current Population Survey.

Analyses were then conducted to determine the percentage of students who gave various responses to each cognitive and background question. Item response theory (IRT) was used to estimate average proficiency for the nation and various subgroups of interest within the nation. IRT scaling was performed separately within each age/grade level for each of the three trend assessments (science, mathematics, and reading). Each of the three assessments employs slightly different steps in data analysis and IRT scaling. The steps for each subject area are described in detail in the *NAEP 1996 Technical Report*. Because these descriptions are rather lengthy they are not repeated in this appendix.

IRT models the probability of answering a question correctly as a mathematical function of proficiency or skill. The main purpose of IRT analysis is to provide a common scale on which performance can be compared across groups, such as those defined by age, assessment year, or subpopulations (e.g., race/ethnicity or gender).

Students do not receive enough questions about a specific topic to permit reliable estimates of individual performance. Traditional test scores for individual students, even those based on IRT, would contribute to misleading estimates of population characteristics, such as subgroup averages and percentages of students at or above a certain proficiency level. Instead, NAEP constructs sets of plausible values designed to represent the distribution of proficiency in the population.⁶ A plausible value for an individual is not a scale score for that individual but may be regarded as a representative value from the distribution of potential scale scores for all students in the population with similar characteristics and identical patterns of item response. Statistics describing performance on the NAEP scales are based on these plausible values. These statistics estimate values that would have been obtained had individual proficiencies been observed — that is, had each student responded to a sufficient number of cognitive questions so that his or her proficiency could be precisely estimated.

For the 1996 mathematics, reading, and science trend assessments, separate IRT scales were constructed within each grade. These scales were linked to the previously established scales within each subject area via a common population linking procedure. The reading trend scale was constructed based on the 1984 assessment and included all previous reading assessments. The science and mathematics trend scales were developed based on the 1986 science and mathematics assessments, respectively, and also included previous assessments.

⁶ For theoretical justification of the procedures employed, see Mislevy, R.J. (1988). Randomization-based inferences about latent variables from complex samples. *Psychometrika*, 56 (2), 177-96.

For computational details, see the *NAEP 1996 Technical Report*.

The initial trend scaling, however, did not include the 1969-70 or 1973 science assessments, or the 1973 mathematics assessment, because these assessments had too few questions in common with subsequent assessments. To provide a link to the early assessment results for the nation and for subgroups defined by race/ethnicity, gender, and region at each of three age levels, estimates of average scale scores were extrapolated from previous analyses.

The extrapolated estimates were obtained by assuming that within a given age level the relationship between the logit transformation of a subgroup's average p-value (i.e., average proportion correct) for common questions and its respective scale score average was linear and that the same line held for all assessment years and for all subgroups within the age level. More details about how these estimates were extrapolated appear in *The NAEP 1996 Technical Report*. Because of the necessity for the use of extrapolation of the average scale scores for these early assessments, caution should be used in interpreting the patterns of trends across those assessment years.

As described earlier, the NAEP scales for all the subjects make it possible to examine relationships between students' performance and a variety of background factors measured by NAEP. The fact that a relationship exists between achievement and another variable, however, does not reveal the underlying cause of the relationship, which may be influenced by a number of other variables. Similarly, the assessments do not capture the influence of unmeasured variables. The results are most useful when they are considered in combination with other information about the student population and the educational system, such as trends in instruction, changes in the school-age population, and societal demands and expectations.

Scale Anchoring Analysis

To facilitate interpretation of the NAEP results, the scales were divided into successive levels of performance and a "scale anchoring" process was used to define what it means to score in each of these levels. NAEP's scale anchoring follows an empirical procedure whereby the scaled assessment results are analyzed to delineate sets of questions that discriminate between adjacent performance levels on the scales. For the science, mathematics, and reading trend scales, these levels are 150, 200, 250, 300, and 350. For these five levels, questions were identified that were likely to be answered correctly by students performing at a particular level on the scale and much less likely to be answered correctly by students performing at the next lower level.

The guidelines used to select such questions were as follows: students at a given level must have at least a 65 percent probability of success with the questions, while students at the next lower level have a much lower probability of success (that is, lower than 50 percent); and the difference in probabilities between adjacent levels must exceed 30 percent. For each of the three curriculum areas, subject-matter specialists examined these empirically selected question sets and used their professional judgment to characterize each level. The reading scale anchoring was conducted on the basis of the 1984 assessment, and the scale anchoring for mathematics and science trend reporting was based on the 1986 assessments.

NAEP Reporting Groups

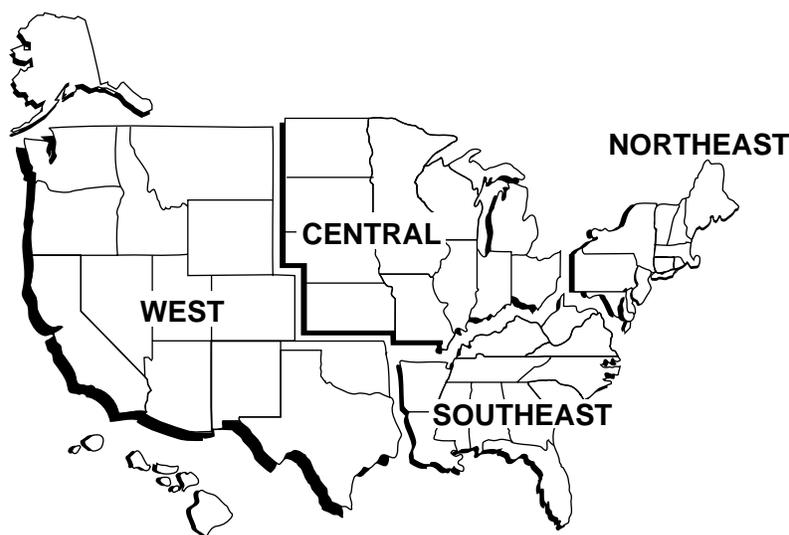
This report contains results for the nation and for groups of students within the nation defined by shared characteristics. The subgroups defined by race/ethnicity, parents' education level, gender, and region are defined below.

Race/Ethnicity. Results are presented for students in different racial/ethnic groups according to the following mutually exclusive categories: White, Black, Hispanic, Asian/Pacific Islander, and American Indian (including Alaskan Native). Some racial/ethnic results are not reported separately because there were too few students in the group. The data for all students, regardless of whether their racial/ethnic group was reported separately, were included in computing the overall national results.

Parents' Education Level. Students were asked to indicate the extent of schooling for each of their parents: did not finish high school, graduated from high school, had some education after high school, or graduated from college. The response indicating the higher level of education for either parent was selected for reporting.

Gender. Results are reported separately for males and females. Gender was reported by the student.

Region. The United States was divided into four regions: Northeast, Southeast, Central, and West. States in each region are shown on the map below. Each state except Virginia is contained entirely in one region. The part of Virginia that is part of the Washington, D.C.-Maryland-Virginia metropolitan statistical area is included in the Northeast region; the remainder of the state is included in the Southeast region.



Estimating Variability

The statistics presented in this report are estimates of group and subgroup performance based on samples of students, rather than the values that could be calculated if every student in the nation answered every assessment question. It is therefore important to have measures of the degree of uncertainty of the estimates. Accordingly, in addition to providing estimates of percentages of students and their average scale score, this report provides information about the uncertainty of each statistic.

Two components of uncertainty are accounted for in the variability of statistics based on scale scores: the uncertainty due to sampling only a small number of students relative to the whole population and the uncertainty due to sampling only a relatively small number of questions. The variability of estimates of percentages of students having certain background characteristics or answering a certain cognitive question correctly is accounted for by the first component alone. Because NAEP uses complex sampling procedures, conventional formulas for estimating sampling variability that assume simple random sampling are inappropriate. For this reason, NAEP uses a jackknife replication procedure to estimate standard errors. The jackknife standard error provides a reasonable measure of uncertainty for any information about students that can be observed without error, but each student typically responds to so few questions within any content area that the scale score for any single student would be imprecise. In this case, using plausible values technology makes it possible to describe the performance of groups and subgroups of students, but the underlying imprecision that makes this step necessary adds an additional component of variability to statistics based on NAEP scale scores.⁷

The reader is reminded that, like those from all surveys, NAEP results are also subject to other kinds of errors including the effects of necessarily imperfect adjustments for student and school nonresponse and other largely unknowable effects associated with the particular instrumentation and data collection methods used. Nonsampling errors can be attributed to a number of sources: inability to obtain complete information about all selected students in all selected schools in the sample (some students or schools refused to participate, or students participated but answered only certain questions); ambiguous definitions; differences in interpreting questions; inability or unwillingness to give correct information; mistakes in recording, coding, or scoring data; and other errors of collecting, processing, sampling, and estimating missing data. The extent of nonsampling errors is difficult to estimate. By their nature, the impacts of such error cannot be reflected in the data-based estimates of uncertainty provided in NAEP reports.

⁷ For further details, see Johnson, E.G. (1989). Considerations and techniques for the analysis of NAEP data. *Journal of Educational Statistics*, 14(4) 303-334.

Drawing Inferences from the Results

The use of confidence intervals, based on the standard errors, provides a way to make inferences about the population averages and percentages in a manner that reflects the uncertainty associated with the sample estimates. An estimated sample scale score average ± 2 standard errors represents about a 95 percent confidence interval for the corresponding population quantity. This means that with 95-percent certainty, the average performance of the entire population of interest is within about ± 2 standard errors of the sample average.

As an example, suppose that the average mathematics scale score of students in a particular group was 256, with a standard error of 1.2. A 95 percent confidence interval for the population quantity would be as follows:

$$\begin{aligned} \text{Average} \pm 2 \text{ standard errors} &= 256 \pm 2(1.2) = 256 \pm 2.4 = \\ &256 - 2.4 \text{ and } 256 + 2.4 = (253.6, 258.4) \end{aligned}$$

Thus, one can conclude with close to 95 percent certainty that the average scale score for the entire population of students in that group is between 253.6 and 258.4.

Similar confidence intervals can be constructed for percentages, provided that the percentages are not extremely large or extremely small. For percentages, confidence intervals constructed in the above manner work best when sample sizes are large, and the percentages being tested have magnitude relatively close to 50 percent. Statements about group differences should be interpreted with caution if at least one of the groups being compared is small in size and/or if “extreme” percentages are being compared. Percentages, P , were treated as “extreme” if:

$$P < P_{lim} = \frac{200}{N_{EFF} + 2} \quad \text{where the effective sample size, } N_{EFF} = \frac{P(100 - P)}{(SE)^2} \quad \text{and } SE \text{ is the}$$

jackknife standard error of P . This “rule of thumb” cutoff leads to flagging a large proportion of confidence intervals that would otherwise include values < 0 or > 1 . Similarly, at the other end of the 0 - 100 scale, a percentage is deemed extreme if $100 - P < P_{lim}$. In either extreme case, the confidence intervals described above are not appropriate, and procedures for obtaining accurate confidence intervals are quite complicated. In this case, the value of P was reported, but no standard error was estimated and hence no tests were conducted.

As for percentages, confidence intervals for average scale scores are most accurate when sample sizes are large. For some of the subgroups of students for which average scale scores or percentages were reported, student sample sizes could be quite small. For results to be reported for any subgroup, a minimum student sample size of 62 was required. If students in a particular subgroup were clustered within a small number of geographic primary sampling units (PSUs), the estimates of the standard errors might also be inaccurate. So, subgroup data were required to come from a minimum of five PSUs.

To determine whether there is a real difference between the average scale score (or percentage of a certain attribute) for two groups in the population, one needs to obtain an estimate of the degree of uncertainty associated with the difference between the average scale scores or percentages of these groups for the sample. This estimate of the degree of uncertainty — called the standard error of the difference between the groups — is obtained by squaring each group's standard error, summing these squared standard errors, and then taking the square root of this sum. This procedure produces a conservative estimate of the standard error of the difference, since the estimates of the group averages or percentages will be positively correlated to an unknown extent due to the sampling plan. Direct estimation of the standard errors of all reported differences would involve a heavy computational burden. Similar to the manner in which the standard error for an individual group average or percentage is used, the standard error of the difference can be used to help determine whether differences between assessment years are real. If zero is within the confidence interval for the differences there is no statistically significant difference between the groups.

To be more specific about the way in which differences between average scale scores for two groups were shown to be statistically significant with 95 percent certainty, whenever comparisons were made with the students assessed in the assessment years for which average scale scores were extrapolated (1970 and 1973 for science; 1973 for mathematics) \pm about 2 standard errors (from a normal distribution) was used to construct the confidence interval. However, when the two groups that were being compared were from other assessments (those with scale scores estimated without extrapolation), the number multiplied by the standard error varied. This multiplier is the .975(1-.025) percentile from a T-distribution with the degrees of freedom that vary by the values of the average scale scores, their standard errors, and the number of PSUs that contribute to the average scale scores. (See the *NAEP 1996 National Technical Report* for more details.)

Sometimes a group of related comparisons are made, such as comparing the average scale scores for a previous assessment with those for the current assessment year for specific groups of students. If one wants to hold the certainty level for a specific set of comparisons at a particular level (e.g., 95), adjustments (called multiple-comparisons procedures) need to be made. One such procedure — the Bonferroni method — was used to form confidence intervals for the differences for sets of comparisons. The set of comparisons is referred to as a “family,” and the typical family involves all subgroups related by a certain background question. An example of a set of comparisons is the comparison of average science scale scores from 1996 and 1990 for male students and the comparison of average scale scores from 1996 and 1990 for female students.

Multiple-comparisons procedures, like the Bonferroni method, are useful for controlling the overall Type I error rate for a defined set of hypothesis tests. However, especially when the number of potential comparisons which could be made is large, as in NAEP data, this protection comes at the substantial loss of power in detecting specific consistent patterns in the data. For example, more powerful and complex tests of significance designed to identify consistent patterns in the data might judge that two groups were significantly different when a Bonferroni multiple-comparisons procedure would not.

One such set of tests of significance is the test of linear and test of quadratic trends applied to the trend data for the nation and selected subpopulations. The purpose of this first set of general tests was to determine whether the results of the series of assessments in a given subject could be generally characterized as increasing or decreasing, and whether the results could be generally characterized as a simple curve. A linear relationship indicates that results have steadily increased (or decreased) over the time period of interest. Simple curvilinear (i.e., quadratic) relationships capture more complex patterns. For example, one possible pattern is to have initial score declines over part of the time period followed by score increases in more recent assessments. Another possible pattern is to have a sequence of several assessments in which scores increased followed by a period of relative stable performance. These examples are two, but not all, of the simple curvilinear relationships that were tested.

The linear and quadratic components of the trend in average scale scores for a given subject area and age group were estimated by applying two sets of contrasts to the set of average scale scores by year. The linear component of the trend was estimated by the sum $b_1 = \sum c_j x_j$, where the x_j are the average scale scores by year and the c_j are defined such that b_1 corresponds to the slope of an unweighted regression of the average scale scores on the assessment year. The quadratic component was estimated by the sum $b_2 = \sum d_j x_j^2$, in which the d_j are formally orthogonal to the c_j and are defined such that b_2 is the quadratic term in the unweighted regression of the average scale scores on the assessment year and the square of the assessment year. The statistical significance of b_1 and b_2 was evaluated by comparing each estimate to its estimated standard error. The standard error of b_1 was estimated as the square root of the sum $\sum c_j^2 SE_j^2$, in which SE_j is the estimated standard error of x_j . The estimated standard error of the b_2 was analogously defined. The linear and quadratic trend tests make it possible to make statements about results across assessment years in a more powerful way than if results for each year had been compared to those of every other year, using a multiple-comparison procedure such as the Bonferroni method. These tests do not control the overall Type I error rate when they are applied to several related subgroups, such as the students in each region of the country. For this reason, the Bonferroni method for controlling Type I error was used when the trends for related subgroups were tested. For example, when tests were conducted for linear trend for the separate race/ethnicity groups (i.e., White, Black, and Hispanic) these tests were treated as a single family of comparisons of size 3. The significance level for each of the separate tests was adjusted by the Bonferroni procedure to yield a family-wise error rate of .05.

The reader is cautioned that some averages and standard errors in this report may differ slightly from values reported in previous trend reports because of a slight modification of procedures. The method used to round off numbers to the number of reported decimal places was modified to conform to NCEES standards, beginning with the analysis of the 1994 long-term trend assessments.

Data Appendix A

Science

Table A.1

NAEP 1996 Science Long-Term Trend Assessment — Age 9
Percentages of students with science scale scores at or above 150



	1977	1982	1986	1990	1992	1994	1996	*	‡	L	Q
TOTAL	93.5 (0.6)	95.2 (0.7)	96.2 (0.3)	97.0 (0.3)	97.4 (0.3)	97.2 (0.4)	96.8 (0.4)	+			-
Gender											
Male	94.3 (0.5)	95.0 (1.0)	96.8 (0.5)	96.8 (0.5)	97.7 (0.3)	97.1 (0.4)	96.9 (0.5)	+			+
Female	92.8 (0.7)	95.5 (1.2)	95.6 (0.6)	97.1 (0.4)	97.1 (0.5)	97.3 (0.5)	96.6 (0.6)	+			-
Race/Ethnicity											
White	97.7 (0.3)	98.3 (0.4)	98.2 (0.3)	99.2 (0.2)	99.2 (0.1)	99.1 (0.3)	98.6 (0.3)				+
Black	72.4 (1.8)	82.1 (3.0)	88.6 (1.4)	88.0 (1.3)	90.7 (1.8)	91.0 (1.5)	91.0 (1.6)	+			-
Hispanic	84.6 (1.8)	85.1 (3.1)	89.6 (2.4)	93.6 (1.5)	92.4 (1.7)	91.1 (2.3)	92.6 (1.9)	+			+
Other	94.9 (2.4)	*****	95.9 (1.8)	96.3 (****)	96.3 (1.8)	93.9 (1.7)	94.6 (2.0)				
Grade											
Below Modal Grade	86.2 (1.1)	88.5 (1.9)	91.8 (0.8)	93.2 (0.9)	94.5 (0.7)	94.3 (0.9)	94.0 (0.8)	+			+
At Modal Grade	95.9 (0.6)	98.1 (0.6)	98.5 (0.3)	99.0 (0.3)	99.2 (0.2)	98.6 (0.3)	98.2 (0.3)	+			-
Above Modal Grade	96.4 (2.2)	*****	*****	*****	*****	*****	*****				
Region											
Northeast	94.6 (0.7)	94.5 (1.4)	96.7 (0.9)	97.1 (0.6)	97.9 (0.9)	97.9 (0.5)	97.3 (0.6)	+			+
Southeast	87.8 (1.8)	92.7 (1.6)	95.0 (1.2)	94.6 (0.9)	95.6 (0.5)	96.5 (0.8)	95.8 (1.0)	+			+
Central	95.5 (0.8)	97.5 (1.1)	97.1 (0.6)	98.4 (0.7)	98.7 (0.5)	98.0 (0.7)	97.2 (0.8)				
West	94.9 (1.1)	95.4 (1.3)	95.9 (0.7)	97.7 (0.7)	97.3 (0.5)	96.3 (0.8)	96.8 (0.8)				
Parents' Education Level											
Less than H.S.	86.0 (1.7)	85.5 (3.5)	90.1 (3.4)	93.3 (2.3)	96.0 (1.5)	93.2 (1.9)	91.8 (1.8)				+
Graduated H.S.	95.0 (0.5)	96.1 (1.0)	95.6 (0.6)	96.9 (0.8)	95.2 (0.7)	96.6 (0.8)	96.4 (1.1)				
Some Education After H.S.	97.1 (0.9)	96.6 (1.8)	98.0 (1.1)	97.6 (1.2)	97.6 (1.0)	97.8 (1.0)	98.5 (0.4)				
Graduated College	96.8 (0.6)	97.2 (0.7)	98.0 (0.4)	98.1 (0.4)	98.5 (0.5)	98.2 (0.3)	98.3 (0.3)				+
Unknown	91.4 (0.8)	93.8 (1.9)	95.0 (0.6)	96.0 (0.6)	97.1 (0.5)	96.3 (0.8)	95.2 (0.8)	+			+
Type Of School											
Public	93.0 (0.7)	94.9 (0.8)	95.8 (0.4)	96.7 (0.4)	97.1 (0.4)	96.9 (0.4)	96.7 (0.5)	+			-
Nonpublic	98.1 (0.6)	98.9 (****)	98.2 (0.7)	98.7 (****)	99.2 (****)	99.3 (0.4)	97.2 (1.2)				
Quartiles											
Upper	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)				
Middle two	99.5 (0.1)	100.0 (****)	99.8 (0.1)	100.0 (****)	100.0 (****)	100.0 (****)	99.9 (****)				
Lower	75.2 (1.4)	81.0 (2.5)	85.2 (1.1)	87.9 (1.2)	89.6 (1.3)	88.8 (1.3)	87.3 (1.5)	+			-

Standard errors of the estimated percentages appear in parentheses. When no value appears (****), statistical tests involving this value should be interpreted with caution; standard error estimates may not be accurately determined and/or the sampling distribution of the statistic does not match statistical test assumptions (See Procedural Appendix).

* Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1977.

‡ Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1994.

L Indicates that the positive (+) or negative (-) linear trend is significant.

Q Indicates that the positive (+) or negative (-) quadratic trend is significant.

***** Data are unavailable for this assessment year.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table A.2

NAEP 1996 Science Long-Term Trend Assessment — Age 9
Percentages of students with science scale scores at or above 200



	1977	1982	1986	1990	1992	1994	1996	*	‡	L	Q
TOTAL	68.0 (1.1)	70.7 (1.9)	72.0 (1.1)	76.4 (0.9)	78.0 (1.2)	77.4 (1.0)	76.1 (1.2)	+			
Gender											
Male	69.5 (1.2)	69.7 (2.0)	74.1 (1.4)	76.3 (1.2)	80.4 (1.4)	77.6 (0.9)	76.8 (1.8)	+			
Female	66.5 (1.1)	71.8 (2.2)	70.0 (1.3)	76.4 (1.1)	75.7 (1.2)	77.2 (1.4)	75.5 (1.0)	+			
Race/Ethnicity											
White	76.8 (0.7)	78.4 (2.0)	78.9 (1.0)	84.4 (0.7)	85.5 (0.9)	85.6 (1.0)	83.8 (1.2)	+			
Black	27.2 (1.5)	38.9 (2.7)	46.2 (2.3)	46.4 (3.1)	51.3 (3.5)	51.6 (2.3)	52.2 (3.4)	+			
Hispanic	42.0 (3.1)	40.2 (6.1)	50.1 (3.7)	56.3 (3.7)	55.5 (4.3)	49.9 (3.1)	57.8 (3.1)	+			
Other	62.0 (6.9)	***** (****)	67.4 (4.1)	76.3 (7.0)	73.2 (3.7)	65.3 (5.6)	70.1 (4.9)				
Grade											
Below Modal Grade	48.8 (1.8)	50.1 (3.3)	55.1 (1.7)	61.1 (2.1)	64.5 (1.6)	64.4 (1.4)	63.7 (2.3)	+			
At Modal Grade	74.2 (1.1)	79.6 (1.9)	80.7 (0.9)	84.5 (1.0)	86.1 (1.3)	83.8 (1.3)	82.3 (1.0)	+			-
Above Modal Grade	83.0 (4.1)	***** (****)	***** (****)	***** (****)	***** (****)	***** (****)	***** (****)				
Region											
Northeast	72.6 (1.6)	71.5 (3.5)	75.6 (2.5)	78.2 (2.3)	80.6 (2.2)	80.0 (2.7)	79.1 (1.8)	+			
Southeast	55.0 (2.4)	63.0 (3.6)	67.3 (3.0)	68.4 (2.4)	71.4 (2.4)	74.5 (2.7)	71.6 (3.1)	+			
Central	72.5 (2.1)	75.4 (3.7)	75.2 (2.1)	81.9 (1.3)	83.7 (1.4)	81.9 (2.2)	79.1 (2.2)				+
West	68.5 (2.3)	71.4 (3.8)	69.9 (3.0)	76.8 (2.1)	75.9 (2.7)	73.6 (2.1)	74.9 (1.6)				
Parents' Education Level											
Less than H.S.	49.8 (2.4)	54.9 (8.7)	55.1 (3.6)	60.5 (4.2)	68.5 (3.2)	61.8 (4.0)	59.8 (3.4)				
Graduated H.S.	71.2 (1.4)	68.2 (4.3)	69.1 (1.9)	75.2 (2.1)	71.2 (2.0)	73.7 (1.9)	71.6 (2.6)				
Some Education After H.S.	81.9 (1.5)	80.7 (2.4)	80.2 (1.9)	81.3 (2.3)	82.1 (1.9)	82.8 (2.5)	84.9 (1.9)				
Graduated College	77.7 (1.2)	78.8 (2.0)	80.4 (1.2)	81.9 (1.2)	84.3 (1.3)	83.1 (1.3)	83.3 (1.6)	+			+
Unknown	60.8 (1.5)	60.9 (3.6)	65.0 (2.0)	71.3 (1.4)	73.2 (1.8)	71.6 (2.0)	68.8 (1.2)	+			+
Type Of School											
Public	66.4 (1.3)	69.5 (2.1)	70.5 (1.3)	75.5 (1.0)	76.7 (1.3)	76.1 (1.2)	75.3 (1.3)	+			+
Nonpublic	80.3 (1.7)	82.6 (3.5)	79.7 (2.3)	83.6 (2.4)	86.2 (2.0)	87.1 (2.4)	81.6 (3.2)				
Quartiles											
Upper	99.0 (0.3)	100.0 (****)	99.7 (0.2)	99.9 (****)	99.9 (****)	99.9 (****)	99.9 (****)				
Middle two	78.4 (0.6)	85.6 (1.9)	84.9 (1.1)	90.0 (0.8)	91.3 (1.0)	91.4 (1.0)	89.8 (1.3)	+			-
Lower	16.2 (1.1)	11.6 (2.0)	18.6 (1.6)	25.6 (2.0)	29.2 (2.3)	26.8 (2.0)	24.9 (2.1)	+			+

Standard errors of the estimated percentages appear in parentheses. When no value appears (****), statistical tests involving this value should be interpreted with caution; standard error estimates may not be accurately determined and/or the sampling distribution of the statistic does not match statistical test assumptions (See Procedural Appendix).

* Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1977.

‡ Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1994.

L Indicates that the positive (+) or negative (-) linear trend is significant.

Q Indicates that the positive (+) or negative (-) quadratic trend is significant.

***** Data are unavailable for this assessment year.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table A.3

NAEP 1996 Science Long-Term Trend Assessment — Age 9
Percentages of students with science scale scores at or above 250



	1977	1982	1986	1990	1992	1994	1996	*	‡	L	Q
TOTAL	25.7 (0.7)	24.3 (1.8)	27.5 (1.4)	31.1 (0.8)	32.8 (1.0)	33.7 (1.2)	32.2 (1.3)	+			
Gender											
Male	27.4 (0.9)	25.6 (2.6)	29.9 (2.0)	33.1 (1.1)	37.2 (1.7)	35.3 (1.4)	33.9 (1.9)	+			+
Female	24.0 (0.9)	23.0 (2.0)	25.1 (1.4)	29.1 (1.0)	28.6 (1.1)	32.2 (1.5)	30.7 (1.9)	+			+
Race/Ethnicity											
White	30.8 (0.7)	29.4 (2.1)	32.7 (1.5)	37.5 (1.1)	39.4 (1.1)	40.8 (1.5)	39.6 (1.5)	+			+
Black	3.5 (0.6)	3.9 (1.3)	8.3 (1.5)	8.5 (1.1)	9.2 (1.4)	11.1 (1.4)	10.6 (2.0)	+			+
Hispanic	8.8 (1.7)	4.2 (2.7)	10.7 (2.4)	11.6 (2.1)	11.7 (1.8)	10.8 (2.5)	13.1 (3.1)				
Other	20.5 (4.9)	***** (****)	27.1 (5.8)	30.1 (6.0)	30.4 (4.7)	22.1 (4.3)	25.8 (4.9)				
Grade											
Below Modal Grade	11.0 (0.9)	8.4 (1.7)	13.0 (1.3)	16.5 (1.2)	20.0 (1.6)	20.3 (1.6)	18.1 (1.0)	+			+
At Modal Grade	30.3 (0.9)	31.0 (2.5)	35.0 (1.7)	39.0 (1.1)	40.4 (1.0)	40.5 (1.6)	39.4 (1.9)	+			+
Above Modal Grade	45.7 (7.0)	***** (****)	***** (****)	***** (****)	***** (****)	***** (****)	***** (****)				
Region											
Northeast	28.9 (1.1)	25.8 (3.1)	30.5 (2.9)	33.4 (2.9)	35.9 (2.7)	36.8 (2.3)	35.0 (2.6)				+
Southeast	17.2 (1.5)	20.2 (3.6)	23.3 (3.0)	24.9 (1.4)	26.5 (1.8)	30.4 (2.3)	27.9 (3.0)	+			+
Central	29.2 (1.6)	27.5 (3.6)	30.1 (2.3)	34.4 (1.8)	38.7 (2.3)	38.1 (2.6)	35.9 (2.7)				+
West	25.3 (1.2)	23.1 (4.6)	26.2 (2.6)	31.7 (1.7)	29.8 (2.2)	30.1 (2.7)	30.7 (2.6)				
Parents' Education Level											
Less than H.S.	12.7 (1.3)	8.6 (4.0)	12.7 (2.7)	16.3 (3.5)	19.6 (2.8)	16.2 (3.1)	16.1 (3.7)				
Graduated H.S.	27.0 (1.2)	20.3 (3.1)	23.1 (1.8)	27.3 (1.8)	26.2 (1.7)	27.4 (2.3)	24.7 (2.1)				
Some Education After H.S.	39.4 (1.5)	31.9 (5.1)	38.5 (3.7)	40.7 (2.5)	39.2 (3.1)	42.1 (4.3)	44.1 (4.1)				
Graduated College	35.1 (1.2)	32.2 (2.7)	36.8 (1.8)	38.3 (1.2)	40.2 (1.4)	40.6 (1.6)	41.7 (2.0)	+			+
Unknown	18.9 (0.8)	16.1 (2.1)	19.5 (1.7)	23.9 (1.3)	26.5 (1.7)	26.8 (1.9)	22.7 (2.0)				+
Type Of School											
Public	24.5 (0.9)	23.9 (2.1)	26.3 (1.5)	30.3 (0.8)	31.5 (1.0)	32.5 (1.4)	30.9 (1.4)	+			+
Nonpublic	35.6 (1.9)	28.2 (5.6)	33.8 (2.8)	37.2 (3.0)	40.6 (3.4)	42.7 (2.8)	41.1 (3.7)				+
Quartiles											
Upper	70.1 (1.1)	79.1 (3.0)	76.1 (2.0)	80.2 (1.5)	82.7 (1.6)	83.6 (1.3)	83.6 (1.9)	+			+
Middle two	16.2 (0.6)	9.1 (1.9)	16.9 (1.5)	22.1 (1.0)	23.9 (1.3)	25.3 (1.7)	22.5 (1.8)	+			+
Lower	0.2 (0.1)	0.0 (****)	0.2 (****)	0.2 (0.1)	0.4 (0.2)	0.4 (0.2)	0.3 (****)				

Standard errors of the estimated percentages appear in parentheses. When no value appears (****), statistical tests involving this value should be interpreted with caution; standard error estimates may not be accurately determined and/or the sampling distribution of the statistic does not match statistical test assumptions (See Procedural Appendix).

* Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1977.

‡ Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1994.

L Indicates that the positive (+) or negative (-) linear trend is significant.

Q Indicates that the positive (+) or negative (-) quadratic trend is significant.

**** Data are unavailable for this assessment year.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table A.4

NAEP 1996 Science Long-Term Trend Assessment — Age 9
Percentages of students with science scale scores at or above 300



	1977	1982	1986	1990	1992	1994	1996	*	‡	L	Q
TOTAL	3.2 (0.3)	2.3 (0.7)	3.0 (0.5)	3.1 (0.3)	3.4 (0.3)	3.8 (0.4)	4.4 (0.4)	+		+	+
Gender											
Male	3.7 (0.3)	2.5 (1.0)	3.8 (0.6)	4.2 (0.6)	4.6 (0.6)	4.5 (0.7)	5.2 (0.7)			+	
Female	2.6 (0.3)	2.1 (0.6)	2.2 (0.5)	2.0 (0.3)	2.2 (0.3)	3.2 (0.4)	3.6 (0.6)				+
Race/Ethnicity											
White	3.9 (0.3)	2.9 (0.9)	3.8 (0.6)	3.9 (0.4)	4.3 (0.4)	4.9 (0.6)	5.9 (0.5)	+		+	+
Black	0.2 (****)	0.1 (****)	0.3 (****)	0.1 (****)	0.3 (****)	0.2 (****)	0.3 (****)				
Hispanic	0.3 (****)	0.0 (****)	0.2 (****)	0.4 (****)	0.4 (****)	0.7 (0.5)	0.4 (****)				
Other	1.9 (1.0)	***** (****)	2.1 (1.1)	3.2 (1.5)	3.2 (1.5)	1.4 (****)	1.6 (0.8)				
Grade											
Below Modal Grade	0.7 (0.1)	0.1 (****)	0.6 (0.2)	0.9 (0.4)	1.2 (0.3)	1.4 (0.5)	1.4 (0.4)				
At Modal Grade	3.9 (0.4)	3.0 (0.9)	4.2 (0.7)	4.3 (0.5)	4.7 (0.4)	5.0 (0.6)	5.9 (0.7)	+		+	
Above Modal Grade	9.7 (5.1)	***** (****)	***** (****)	***** (****)	***** (****)	***** (****)	***** (****)				
Region											
Northeast	3.6 (0.4)	2.6 (1.2)	3.7 (1.9)	3.4 (0.7)	4.1 (0.8)	4.5 (1.0)	5.6 (1.2)				
Southeast	1.6 (0.3)	1.4 (0.5)	2.3 (0.4)	2.2 (0.7)	2.5 (0.7)	3.1 (1.2)	3.2 (0.8)				
Central	3.8 (0.5)	2.9 (1.5)	3.2 (0.8)	3.8 (0.8)	4.4 (0.6)	4.3 (0.9)	5.0 (0.8)				
West	3.2 (0.5)	2.1 (****)	2.7 (0.9)	3.0 (0.5)	2.6 (0.5)	3.4 (0.5)	3.9 (0.8)				
Parents' Education Level											
Less than H.S.	0.9 (0.4)	0.2 (****)	0.8 (****)	0.5 (****)	1.7 (1.0)	0.6 (****)	0.4 (****)				
Graduated H.S.	3.2 (0.3)	1.8 (****)	1.6 (0.5)	2.0 (0.6)	1.8 (0.6)	2.5 (0.7)	1.8 (0.8)				
Some Education After H.S.	5.7 (1.0)	2.4 (****)	4.4 (1.4)	5.4 (1.3)	4.8 (1.5)	6.2 (1.5)	7.0 (2.5)				
Graduated College	5.4 (0.7)	3.7 (1.1)	5.0 (1.0)	4.5 (0.6)	5.0 (0.6)	5.1 (0.7)	7.0 (0.7)				
Unknown	1.7 (0.4)	0.8 (0.5)	1.4 (0.4)	1.6 (0.5)	1.9 (0.4)	2.4 (0.5)	1.9 (0.4)				
Type Of School											
Public	2.9 (0.3)	2.3 (0.7)	2.8 (0.6)	3.0 (0.4)	3.2 (0.3)	3.6 (0.5)	4.1 (0.3)	+		+	
Nonpublic	5.1 (1.1)	2.1 (1.2)	4.0 (0.7)	3.9 (1.0)	4.6 (1.3)	5.6 (1.0)	6.5 (2.2)				
Quartiles											
Upper	12.0 (0.9)	9.1 (2.3)	11.7 (1.7)	12.1 (1.3)	13.2 (1.1)	14.6 (1.6)	17.1 (1.3)	+		+	+
Middle two	0.3 (0.1)	0.0 (****)	0.1 (0.1)	0.2 (****)	0.2 (0.1)	0.3 (0.1)	0.2 (0.1)				
Lower	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)				

Standard errors of the estimated percentages appear in parentheses. When no value appears (****), statistical tests involving this value should be interpreted with caution; standard error estimates may not be accurately determined and/or the sampling distribution of the statistic does not match statistical test assumptions (See Procedural Appendix).

* Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1977.

‡ Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1994.

L Indicates that the positive (+) or negative (-) linear trend is significant.

Q Indicates that the positive (+) or negative (-) quadratic trend is significant.

***** Data are unavailable for this assessment year.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table A.5

NAEP 1996 Science Long-Term Trend Assessment — Age 9
Percentages of students with science scale scores at or above 350



	1977	1982	1986	1990	1992	1994	1996	*	‡	L	Q
TOTAL	0.1 (0.0)	0.0 (****)	0.1 (****)	0.1 (0.0)	0.1 (****)	0.1 (0.0)	0.1 (0.1)				
Gender											
Male	0.1 (0.0)	0.1 (****)	0.1 (****)	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)	0.2 (0.1)				
Female	0.1 (0.0)	0.0 (****)	0.1 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.1 (****)				
Race/Ethnicity											
White	0.1 (0.0)	0.1 (****)	0.1 (****)	0.1 (0.1)	0.1 (****)	0.1 (0.1)	0.2 (0.1)				
Black	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)				
Hispanic	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)				
Other	0.0 (****)	*****(****)	0.1 (****)	0.1 (****)	0.0 (****)	0.0 (****)	0.0 (****)				
Grade											
Below Modal Grade	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)				
At Modal Grade	0.1 (0.0)	0.1 (****)	0.2 (****)	0.1 (0.1)	0.1 (****)	0.1 (0.1)	0.2 (0.1)				
Above Modal Grade	0.9 (****)	*****(****)	*****(****)	*****(****)	*****(****)	*****(****)	*****(****)				
Region											
Northeast	0.1 (0.1)	0.0 (****)	0.2 (****)	0.0 (****)	0.1 (****)	0.1 (****)	0.2 (****)				
Southeast	0.0 (****)	0.0 (****)	0.1 (****)	0.1 (****)	0.0 (0.0)	0.1 (****)	0.1 (****)				
Central	0.1 (****)	0.0 (****)	0.1 (****)	0.1 (****)	0.2 (****)	0.1 (0.1)	0.1 (****)				
West	0.0 (****)	0.1 (****)	0.1 (****)	0.1 (****)	0.0 (****)	0.1 (****)	0.1 (0.1)				
Parents' Education Level											
Less than H.S.	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.1 (****)	0.0 (****)	0.0 (****)				
Graduated H.S.	0.1 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.1 (****)	0.0 (****)				
Some Education After H.S.	0.1 (****)	0.0 (****)	0.1 (****)	0.1 (****)	0.1 (****)	0.1 (****)	0.2 (****)				
Graduated College	0.1 (0.1)	0.1 (****)	0.2 (****)	0.1 (0.1)	0.1 (0.1)	0.1 (****)	0.2 (0.1)				
Unknown	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.1 (****)	0.0 (****)				
Type Of School											
Public	0.0 (0.0)	0.1 (****)	0.1 (****)	0.1 (0.0)	0.1 (0.0)	0.1 (0.1)	0.1 (0.1)				
Nonpublic	0.2 (****)	0.0 (****)	0.2 (****)	0.1 (****)	0.1 (****)	0.1 (****)	0.3 (****)				
Quartiles											
Upper	0.2 (0.1)	0.2 (****)	0.4 (****)	0.2 (0.1)	0.3 (****)	0.3 (0.2)	0.5 (0.3)				
Middle two	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)				
Lower	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)				

Standard errors of the estimated percentages appear in parentheses. When no value appears (****), statistical tests involving this value should be interpreted with caution; standard error estimates may not be accurately determined and/or the sampling distribution of the statistic does not match statistical test assumptions (See Procedural Appendix).

* Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1977.

‡ Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1994.

L Indicates that the positive (+) or negative (-) linear trend is significant.

Q Indicates that the positive (+) or negative (-) quadratic trend is significant.

**** Data are unavailable for this assessment year.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table A.6

NAEP 1996 Science Long-Term Trend Assessment — Age 13
Percentages of students with science scale scores at or above 150



	1977	1982	1986	1990	1992	1994	1996	*	‡	L	Q
TOTAL	98.5 (0.2)	99.5 (0.1)	99.7 (0.1)	99.7 (0.1)	99.6 (0.1)	99.7 (0.1)	99.7 (0.1)	+			
Gender											
Male	98.8 (0.2)	99.7 (0.1)	99.8 (0.1)	99.7 (0.1)	99.6 (0.2)	99.7 (0.1)	99.7 (****)				
Female	98.2 (0.2)	99.2 (0.2)	99.7 (0.1)	99.7 (0.2)	99.6 (0.2)	99.7 (0.2)	99.6 (0.2)	+			
Race/Ethnicity											
White	99.6 (0.1)	99.9 (0.0)	99.9 (****)	100.0 (****)	100.0 (****)	100.0 (****)	99.9 (****)				
Black	93.1 (1.0)	97.5 (0.7)	99.0 (0.4)	98.8 (0.6)	97.8 (0.6)	98.8 (0.6)	98.7 (0.8)	+			
Hispanic	94.3 (1.3)	98.0 (0.8)	99.0 (0.6)	98.9 (0.6)	99.5 (****)	99.2 (0.4)	99.2 (0.4)	+			
Other	98.0 (1.1)	99.8 (****)	100.0 (****)	99.5 (****)	99.7 (****)	99.3 (****)	99.7 (****)				
Grade											
Below Modal Grade	96.0 (0.5)	98.4 (0.4)	99.3 (0.3)	99.3 (0.2)	99.1 (0.3)	99.3 (0.3)	99.3 (0.4)	+			
At Modal Grade	99.4 (0.1)	99.9 (0.1)	99.9 (0.0)	99.9 (0.0)	99.9 (****)	99.9 (0.0)	99.9 (0.1)	+			
Above Modal Grade	100.0 (****)	*****(****)	*****(****)	*****(****)	*****(****)	*****(****)	*****(****)				
Region											
Northeast	99.3 (0.2)	99.5 (0.2)	99.8 (0.1)	99.7 (****)	99.4 (0.3)	100.0 (****)	99.6 (0.2)				
Southeast	97.3 (0.4)	98.9 (0.4)	99.5 (0.3)	99.6 (0.2)	99.4 (0.3)	99.6 (****)	99.6 (0.2)	+			
Central	99.1 (0.2)	99.8 (0.1)	99.8 (****)	99.9 (****)	99.8 (0.1)	99.7 (****)	99.8 (****)				
West	98.1 (0.3)	99.5 (0.2)	99.8 (0.1)	99.6 (0.2)	99.7 (****)	99.5 (****)	99.7 (****)				
Parents' Education Level											
Less than H.S.	96.4 (0.6)	97.9 (0.9)	98.6 (1.0)	99.5 (****)	98.5 (1.1)	99.3 (****)	98.8 (0.8)				
Graduated H.S.	99.0 (0.2)	99.6 (0.3)	99.8 (0.1)	99.7 (0.2)	99.3 (0.3)	99.6 (0.2)	99.6 (0.3)				
Some Education After H.S.	99.6 (0.2)	99.8 (****)	99.9 (****)	99.9 (****)	100.0 (****)	99.9 (****)	99.8 (****)				
Graduated College	99.7 (0.1)	99.9 (****)	99.9 (****)	99.9 (****)	99.9 (0.1)	99.9 (****)	99.9 (0.1)				
Unknown	95.5 (0.7)	98.6 (0.6)	98.9 (0.5)	98.4 (0.7)	98.7 (0.6)	98.7 (****)	99.1 (****)				
Type Of School											
Public	98.4 (0.2)	99.4 (0.1)	99.7 (0.1)	99.7 (0.1)	99.5 (0.1)	99.7 (0.1)	99.6 (0.2)	+			
Nonpublic	99.8 (****)	99.8 (****)	100.0 (****)	100.0 (****)	99.9 (****)	100.0 (****)	99.9 (****)				
Quartiles											
Upper	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)				
Middle two	100.0 (0.0)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)				
Lower	94.1 (0.6)	97.9 (0.5)	98.8 (0.4)	98.8 (0.3)	98.3 (0.5)	98.8 (0.5)	98.7 (0.5)	+			

Standard errors of the estimated percentages appear in parentheses. When no value appears (****), statistical tests involving this value should be interpreted with caution; standard error estimates may not be accurately determined and/or the sampling distribution of the statistic does not match statistical test assumptions (See Procedural Appendix).

* Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1977.

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L Indicates that the positive (+) or negative (-) linear trend is significant.

Q Indicates that the positive (+) or negative (-) quadratic trend is significant.

***** Data are unavailable for this assessment year.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table A.7

NAEP 1996 Science Long-Term Trend Assessment — Age 13
Percentages of students with science scale scores at or above 200



	1977	1982	1986	1990	1992	1994	1996	*	‡	L	Q
TOTAL	86.0 (0.7)	89.8 (0.8)	91.6 (1.0)	92.3 (0.7)	93.1 (0.5)	92.4 (0.6)	92.0 (0.8)	+	+	-	
Gender											
Male	87.2 (0.8)	91.9 (0.8)	92.9 (1.0)	92.7 (0.8)	93.1 (0.8)	92.2 (0.8)	93.2 (0.9)	+	+	-	
Female	84.7 (0.8)	87.9 (1.0)	90.3 (1.2)	92.0 (0.8)	93.1 (0.7)	92.6 (0.6)	90.9 (1.2)	+	+	-	
Race/Ethnicity											
White	92.2 (0.5)	94.4 (0.6)	96.1 (0.8)	96.9 (0.4)	97.9 (0.4)	97.6 (0.4)	97.0 (0.5)	+	+	-	
Black	57.3 (2.4)	68.6 (2.4)	73.6 (3.0)	77.6 (3.6)	73.8 (2.8)	73.5 (3.2)	75.9 (2.7)	+	+	-	
Hispanic	62.2 (2.4)	75.5 (3.3)	76.7 (3.2)	80.2 (2.9)	86.2 (2.6)	81.2 (2.5)	81.0 (2.8)	+	+	-	
Other	80.9 (2.9)	94.2 (2.4)	93.6 (3.8)	88.1 (4.9)	94.5 (1.9)	92.6 (1.9)	90.1 (1.6)	+			
Grade											
Below Modal Grade	71.4 (1.6)	78.0 (1.8)	83.1 (1.9)	84.9 (1.5)	87.1 (1.2)	86.4 (1.0)	87.4 (1.5)	+	+	-	
At Modal Grade	91.3 (0.6)	94.4 (0.6)	95.7 (0.7)	96.5 (0.5)	96.7 (0.6)	95.9 (0.7)	94.5 (0.8)	+	+	-	
Above Modal Grade	98.4 (0.9)	***** (****)	***** (****)	***** (****)	***** (****)	***** (****)	***** (****)				
Region											
Northeast	90.7 (1.4)	91.5 (1.1)	93.5 (1.2)	92.6 (1.8)	91.6 (1.5)	95.4 (1.0)	91.4 (1.7)				
Southeast	78.1 (1.7)	83.6 (2.2)	89.8 (1.7)	91.0 (1.2)	90.7 (1.5)	90.6 (1.3)	90.4 (1.4)	+	+	-	
Central	89.9 (1.1)	92.0 (1.3)	91.9 (3.5)	94.6 (1.8)	95.4 (0.8)	94.0 (2.0)	95.8 (1.2)	+	+	-	
West	83.5 (1.5)	91.3 (1.4)	91.3 (1.6)	91.2 (1.3)	94.1 (1.0)	90.4 (1.3)	90.8 (1.2)	+	+	-	
Parents' Education Level											
Less than H.S.	71.6 (1.6)	75.8 (2.4)	79.8 (3.5)	82.4 (2.9)	82.4 (3.1)	81.9 (2.3)	79.0 (3.4)			+	
Graduated H.S.	87.0 (0.8)	88.6 (1.1)	90.7 (1.4)	91.4 (1.1)	89.3 (1.2)	90.6 (1.2)	90.0 (1.5)				
Some Education After H.S.	93.4 (0.9)	94.9 (1.4)	95.9 (0.7)	96.6 (0.8)	98.0 (0.7)	94.8 (1.1)	95.8 (1.0)				
Graduated College	95.0 (0.5)	95.5 (0.7)	95.8 (0.7)	96.4 (0.5)	97.1 (0.5)	96.5 (0.4)	95.6 (0.8)				
Unknown	70.1 (1.9)	77.9 (2.1)	78.1 (3.1)	75.4 (2.9)	79.9 (1.9)	79.9 (2.6)	81.2 (2.2)	+	+		
Type Of School											
Public	84.9 (0.8)	89.2 (0.9)	91.3 (1.0)	91.6 (0.8)	92.7 (0.5)	91.9 (0.6)	91.5 (0.8)	+	+	-	
Nonpublic	95.7 (1.0)	95.0 (1.5)	97.3 (1.8)	98.4 (0.8)	96.4 (1.1)	96.5 (1.4)	96.0 (2.1)				
Quartiles											
Upper	99.9 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)				
Middle two	95.5 (0.3)	98.2 (0.2)	99.4 (0.2)	99.6 (0.2)	99.8 (0.1)	99.7 (0.1)	99.6 (0.2)	+	+	-	
Lower	53.0 (1.3)	63.0 (2.0)	67.5 (2.7)	70.1 (2.1)	72.9 (1.5)	70.1 (1.7)	68.8 (2.6)	+	+	-	

Standard errors of the estimated percentages appear in parentheses. When no value appears (****), statistical tests involving this value should be interpreted with caution; standard error estimates may not be accurately determined and/or the sampling distribution of the statistic does not match statistical test assumptions (See Procedural Appendix).

* Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1977.

‡ Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1994.

L Indicates that the positive (+) or negative (-) linear trend is significant.

Q Indicates that the positive (+) or negative (-) quadratic trend is significant.

***** Data are unavailable for this assessment year.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table A.8

NAEP 1996 Science Long-Term Trend Assessment — Age 13
Percentages of students with science scale scores at or above 250



	1977	1982	1986	1990	1992	1994	1996	*	‡	L	Q
TOTAL	48.8 (1.1)	50.9 (1.6)	52.5 (1.6)	56.5 (1.0)	61.3 (1.1)	59.5 (1.1)	57.6 (1.1)	+			
Gender											
Male	52.3 (1.3)	56.2 (1.8)	57.3 (2.1)	59.8 (1.3)	62.9 (1.4)	62.0 (1.3)	61.7 (1.4)	+			+
Female	45.4 (1.2)	46.0 (1.6)	47.7 (1.7)	53.3 (1.4)	59.6 (1.4)	57.1 (1.4)	53.8 (1.5)	+			+
Race/Ethnicity											
White	56.5 (0.9)	58.3 (1.4)	61.0 (1.7)	66.5 (1.2)	71.1 (1.3)	70.5 (1.1)	68.5 (1.2)	+			+
Black	14.9 (1.7)	17.1 (1.9)	19.6 (2.8)	24.3 (3.3)	26.2 (2.8)	22.4 (4.3)	25.5 (2.2)	+			+
Hispanic	18.1 (1.8)	24.1 (5.1)	24.9 (4.3)	30.0 (2.8)	36.5 (2.9)	31.6 (3.3)	30.9 (3.3)	+			+
Other	35.6 (4.9)	64.8 (7.1)	52.6 (6.6)	47.1 (10.2)	62.0 (3.9)	58.9 (4.7)	50.2 (4.5)				
Grade											
Below Modal Grade	26.4 (1.3)	28.3 (2.1)	33.0 (1.9)	39.4 (1.8)	46.3 (1.7)	45.3 (1.8)	47.4 (1.9)	+			+
At Modal Grade	56.8 (1.1)	59.7 (1.7)	61.9 (1.6)	66.3 (1.2)	70.1 (1.2)	67.6 (1.1)	63.1 (1.4)	+	-		-
Above Modal Grade	82.3 (4.0)	***** (****)	***** (****)	***** (****)	***** (****)	***** (****)	***** (****)				
Region											
Northeast	56.1 (2.0)	55.1 (2.7)	59.0 (4.0)	58.1 (2.7)	60.4 (2.8)	66.3 (2.0)	56.6 (3.9)				
Southeast	37.5 (1.6)	40.1 (2.3)	48.6 (3.3)	52.7 (2.7)	57.5 (2.5)	54.6 (3.2)	51.8 (2.6)	+			+
Central	54.8 (2.0)	54.1 (3.5)	49.5 (6.3)	62.7 (3.1)	66.2 (2.2)	64.1 (3.7)	68.6 (1.9)	+			+
West	44.5 (2.4)	53.0 (3.3)	53.3 (2.8)	53.2 (2.2)	60.4 (2.2)	54.6 (2.1)	54.7 (1.6)	+			+
Parents' Education Level											
Less than H.S.	26.0 (1.2)	24.2 (2.1)	28.6 (3.5)	31.1 (2.4)	34.2 (3.3)	34.9 (4.4)	29.2 (4.1)				
Graduated H.S.	46.4 (1.4)	43.1 (2.0)	44.4 (2.0)	47.4 (1.7)	48.6 (2.0)	48.3 (1.8)	49.3 (1.9)				
Some Education After H.S.	61.0 (1.5)	60.3 (2.3)	61.0 (2.4)	65.3 (1.9)	71.3 (1.7)	62.7 (2.1)	63.7 (1.9)				+
Graduated College	67.1 (1.1)	65.6 (1.9)	67.0 (2.1)	70.2 (1.4)	73.2 (1.5)	73.1 (1.4)	68.2 (1.3)				+
Unknown	25.7 (2.1)	28.0 (3.0)	23.9 (2.6)	23.3 (2.3)	31.0 (2.6)	30.3 (3.0)	35.2 (3.0)				
Type Of School											
Public	46.7 (1.2)	49.2 (1.8)	51.9 (1.7)	54.7 (1.2)	60.2 (1.2)	57.8 (1.2)	56.0 (1.3)	+			+
Nonpublic	68.8 (2.6)	65.8 (4.1)	66.8 (8.2)	72.0 (2.6)	68.9 (3.1)	72.7 (3.2)	70.6 (5.4)				
Quartiles											
Upper	92.0 (0.5)	95.1 (0.6)	97.8 (0.5)	99.1 (0.3)	99.6 (****)	99.5 (0.3)	99.5 (0.3)	+			
Middle two	49.0 (1.0)	51.8 (1.3)	54.5 (1.9)	61.6 (1.1)	69.4 (1.4)	66.4 (1.4)	63.1 (1.4)	+			+
Lower	5.3 (0.5)	5.2 (0.8)	3.2 (0.9)	3.9 (0.8)	6.5 (0.8)	5.6 (0.9)	4.7 (1.1)				

Standard errors of the estimated percentages appear in parentheses. When no value appears (****), statistical tests involving this value should be interpreted with caution; standard error estimates may not be accurately determined and/or the sampling distribution of the statistic does not match statistical test assumptions (See Procedural Appendix).

* Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1977.

‡ Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1994.

L Indicates that the positive (+) or negative (-) linear trend is significant.

Q Indicates that the positive (+) or negative (-) quadratic trend is significant.

***** Data are unavailable for this assessment year.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table A.9

NAEP 1996 Science Long-Term Trend Assessment — Age 13
Percentages of students with science scale scores at or above 300



	1977	1982	1986	1990	1992	1994	1996	*	‡	L	Q	
TOTAL	11.1 (0.5)	9.6 (0.7)	9.1 (0.9)	11.2 (0.6)	12.0 (0.8)	11.8 (0.9)	12.3 (0.7)				+	+
Gender												
Male	13.1 (0.6)	12.6 (1.1)	11.9 (1.3)	14.0 (0.9)	14.2 (1.1)	14.8 (1.1)	15.5 (0.9)				+	
Female	9.0 (0.5)	6.9 (0.7)	6.3 (1.1)	8.5 (0.6)	9.9 (0.8)	8.8 (1.0)	9.2 (0.8)					+
Race/Ethnicity												
White	13.4 (0.5)	11.5 (0.8)	11.3 (1.2)	14.2 (0.8)	15.0 (1.0)	14.8 (1.0)	15.9 (0.8)				+	+
Black	1.2 (0.4)	0.8 (0.3)	1.1 (0.4)	1.5 (0.5)	1.8 (0.8)	2.2 (****)	1.9 (0.9)					
Hispanic	1.8 (0.8)	2.4 (0.9)	1.5 (0.7)	3.3 (0.8)	3.3 (1.3)	2.4 (0.9)	3.2 (1.0)					
Other	5.6 (2.0)	15.9 (3.5)	7.4 (2.8)	9.1 (4.6)	14.0 (2.7)	13.6 (4.5)	9.5 (2.7)					
Grade												
Below Modal Grade	3.3 (0.4)	2.6 (0.4)	3.4 (0.6)	5.1 (0.6)	6.3 (0.8)	7.0 (0.6)	8.0 (1.0)	+			+	+
At Modal Grade	13.7 (0.5)	12.3 (0.9)	11.8 (1.3)	14.7 (0.9)	15.2 (1.0)	14.4 (1.1)	14.3 (0.7)				+	
Above Modal Grade	34.5 (5.0)	*****(****)	*****(****)	*****(****)	*****(****)	*****(****)	*****(****)					
Region												
Northeast	13.8 (1.0)	11.2 (1.3)	12.4 (2.2)	12.6 (1.6)	11.7 (1.4)	13.4 (1.9)	11.9 (1.3)					
Southeast	7.1 (0.7)	5.1 (0.6)	6.5 (1.1)	8.8 (0.9)	11.0 (2.1)	10.0 (1.2)	9.7 (1.7)				+	
Central	13.2 (1.0)	10.7 (1.4)	7.4 (1.6)	13.3 (1.4)	13.6 (1.3)	13.9 (1.9)	16.5 (1.4)				+	+
West	9.4 (0.8)	10.9 (1.6)	10.2 (1.7)	10.4 (1.3)	11.7 (1.1)	10.1 (1.3)	11.4 (1.3)					
Parents' Education Level												
Less than H.S.	2.9 (0.4)	1.8 (0.8)	1.9 (1.1)	2.5 (0.8)	1.7 (0.8)	2.7 (1.2)	3.0 (1.3)					
Graduated H.S.	8.4 (0.6)	4.9 (0.7)	4.5 (1.0)	6.3 (1.0)	6.3 (0.8)	5.6 (1.0)	6.1 (1.0)					
Some Education After H.S.	15.7 (1.1)	12.4 (1.6)	9.5 (1.3)	12.8 (1.1)	13.0 (1.4)	12.3 (2.2)	11.5 (1.0)	-				
Graduated College	19.6 (0.9)	15.7 (1.3)	15.7 (2.0)	17.4 (1.1)	17.7 (1.3)	17.9 (1.4)	18.4 (1.2)					
Unknown	3.1 (0.4)	2.6 (0.8)	2.2 (0.9)	1.7 (0.7)	3.3 (0.9)	1.7 (0.7)	5.4 (1.5)					
Type Of School												
Public	10.2 (0.5)	8.9 (0.8)	8.9 (0.9)	10.7 (0.7)	11.9 (0.9)	11.3 (0.9)	11.5 (0.8)				+	
Nonpublic	19.6 (1.9)	16.0 (2.4)	12.8 (3.6)	16.2 (1.5)	13.2 (2.0)	15.5 (2.6)	18.2 (3.0)					
Quartiles												
Upper	36.5 (0.8)	33.8 (2.0)	34.2 (3.2)	41.6 (1.5)	43.9 (2.8)	43.6 (2.3)	45.7 (1.7)	+			+	
Middle two	3.9 (0.4)	2.4 (0.4)	1.1 (0.3)	1.6 (0.4)	2.1 (0.5)	1.7 (0.4)	1.7 (0.4)	-			-	+
Lower	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)					

Standard errors of the estimated percentages appear in parentheses. When no value appears (****), statistical tests involving this value should be interpreted with caution; standard error estimates may not be accurately determined and/or the sampling distribution of the statistic does not match statistical test assumptions (See Procedural Appendix).

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L Indicates that the positive (+) or negative (-) linear trend is significant.

Q Indicates that the positive (+) or negative (-) quadratic trend is significant.

**** Data are unavailable for this assessment year.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table A.10

NAEP 1996 Science Long-Term Trend Assessment — Age 13
Percentages of students with science scale scores at or above 350



		1977	1982	1986	1990	1992	1994	1996	*	‡	L	Q
TOTAL		0.7 (0.1)	0.4 (0.1)	0.2 (0.1)	0.4 (0.1)	0.2 (0.1)	0.2 (0.1)	0.4 (0.2)				
Gender												
	Male	0.9 (0.2)	0.5 (0.2)	0.3 (0.2)	0.6 (0.2)	0.3 (0.1)	0.3 (0.2)	0.7 (0.2)				
	Female	0.4 (0.1)	0.2 (0.1)	0.1 (0.1)	0.2 (****)	0.2 (****)	0.1 (****)	0.2 (****)				
Race/Ethnicity												
	White	0.8 (0.1)	0.4 (0.1)	0.3 (0.1)	0.5 (0.1)	0.3 (0.1)	0.3 (0.1)	0.6 (0.2)				
	Black	0.0 (****)	0.0 (****)	0.0 (****)	0.1 (****)	0.0 (****)	0.0 (****)	0.0 (****)				
	Hispanic	0.0 (****)	0.0 (****)	0.0 (****)	0.1 (****)	0.0 (****)	0.0 (****)	0.0 (****)				
	Other	0.1 (****)	0.8 (****)	0.2 (****)	0.7 (****)	0.6 (****)	0.1 (****)	0.4 (****)				
Grade												
	Below Modal Grade	0.1 (****)	0.1 (****)	0.0 (****)	0.1 (****)	0.0 (****)	0.1 (****)	0.2 (0.1)				
	At Modal Grade	0.8 (0.1)	0.5 (0.2)	0.3 (0.1)	0.5 (0.2)	0.3 (0.1)	0.2 (0.1)	0.5 (0.2)				
	Above Modal Grade	4.4 (1.9)	*****(****)	*****(****)	*****(****)	*****(****)	*****(****)	*****(****)				
Region												
	Northeast	0.9 (0.3)	0.5 (0.2)	0.5 (0.3)	0.4 (0.2)	0.2 (****)	0.2 (****)	0.6 (****)				
	Southeast	0.3 (0.1)	0.1 (****)	0.1 (****)	0.4 (0.2)	0.2 (****)	0.2 (****)	0.3 (****)				
	Central	1.0 (0.3)	0.4 (****)	0.1 (****)	0.5 (0.3)	0.3 (****)	0.3 (****)	0.6 (0.2)				
	West	0.4 (0.1)	0.4 (0.3)	0.2 (****)	0.3 (****)	0.2 (0.1)	0.1 (****)	0.3 (****)				
Parents' Education Level												
	Less than H.S.	0.1 (0.1)	0.0 (****)	0.0 (****)	0.1 (****)	0.0 (****)	0.0 (****)	0.0 (****)				
	Graduated H.S.	0.3 (0.1)	0.1 (****)	0.0 (****)	0.1 (****)	0.0 (****)	0.0 (****)	0.0 (****)				
	Some Education After H.S.	1.0 (0.2)	0.4 (****)	0.1 (****)	0.3 (****)	0.3 (****)	0.3 (****)	0.2 (****)				
	Graduated College	1.4 (0.3)	0.7 (0.2)	0.5 (0.2)	0.8 (0.3)	0.4 (0.2)	0.3 (0.1)	0.8 (0.4)				
	Unknown	0.1 (0.1)	0.0 (****)	0.0 (****)	0.0 (****)	0.1 (0.1)	0.0 (****)	0.1 (****)				
Type Of School												
	Public	0.6 (0.1)	0.3 (0.1)	0.2 (0.1)	0.4 (0.1)	0.3 (0.1)	0.2 (0.1)	0.4 (0.2)				
	Nonpublic	1.6 (0.3)	0.8 (0.5)	0.3 (****)	0.5 (****)	0.1 (****)	0.1 (****)	1.0 (****)				
Quartiles												
	Upper	2.6 (0.4)	1.4 (0.4)	0.9 (0.4)	1.6 (0.4)	0.9 (0.4)	0.7 (0.4)	1.7 (0.7)				
	Middle two	0.0 (0.0)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)				
	Lower	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)				

Standard errors of the estimated percentages appear in parentheses. When no value appears (****), statistical tests involving this value should be interpreted with caution; standard error estimates may not be accurately determined and/or the sampling distribution of the statistic does not match statistical test assumptions (See Procedural Appendix).

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L Indicates that the positive (+) or negative (-) linear trend is significant.

Q Indicates that the positive (+) or negative (-) quadratic trend is significant.

**** Data are unavailable for this assessment year.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table A.11

NAEP 1996 Science Long-Term Trend Assessment — Age 17
Percentages of students with science scale scores at or above 150



		1977	1982	1986	1990	1992	1994	1996	*	‡	L	Q
TOTAL		99.8 (0.0)	99.7 (0.1)	99.9 (****)	99.9 (****)	100.0 (****)	99.8 (0.1)	100.0 (****)				
Gender												
	Male	99.9 (0.0)	99.8 (0.1)	99.9 (****)	99.9 (****)	99.9 (****)	99.8 (****)	99.9 (****)				
	Female	99.7 (0.1)	99.6 (0.1)	99.9 (****)	99.9 (****)	100.0 (****)	99.9 (****)	100.0 (****)				
Race/Ethnicity												
	White	100.0 (0.0)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)				
	Black	98.5 (0.3)	97.9 (0.5)	99.7 (****)	99.4 (****)	99.8 (****)	99.6 (****)	99.9 (****)				
	Hispanic	99.7 (0.2)	98.9 (****)	99.8 (****)	99.6 (****)	100.0 (****)	99.3 (****)	99.8 (****)				
	Other	99.9 (****)	99.8 (****)	99.2 (****)	99.9 (****)	99.9 (****)	99.0 (****)	100.0 (****)				
Grade												
	Below Modal Grade	98.9 (0.3)	98.6 (0.4)	99.6 (****)	99.4 (****)	99.8 (****)	99.5 (0.3)	99.8 (****)				
	At Modal Grade	100.0 (0.0)	99.9 (0.1)	100.0 (****)	100.0 (****)	100.0 (****)	99.9 (****)	100.0 (****)				
	Above Modal Grade	99.9 (0.0)	99.8 (****)	100.0 (****)	100.0 (****)	100.0 (****)	99.7 (****)	100.0 (****)				
Region												
	Northeast	99.9 (****)	99.6 (0.2)	99.9 (****)	99.8 (****)	100.0 (****)	99.7 (0.2)	100.0 (****)				
	Southeast	99.5 (0.2)	99.5 (0.3)	99.9 (****)	99.9 (****)	99.9 (****)	99.9 (****)	99.9 (****)				
	Central	99.9 (0.0)	99.8 (****)	100.0 (****)	99.9 (****)	100.0 (****)	99.8 (****)	100.0 (****)				
	West	99.9 (0.0)	99.7 (0.2)	99.8 (****)	99.9 (****)	100.0 (****)	99.8 (****)	99.9 (****)				
Parents' Education Level												
	Less than H.S.	99.5 (0.2)	99.1 (0.4)	99.6 (****)	99.5 (****)	99.9 (****)	99.4 (****)	99.8 (****)				
	Graduated H.S.	99.9 (0.0)	99.6 (0.2)	99.9 (****)	99.9 (****)	99.9 (****)	99.8 (****)	99.9 (****)				
	Some Education After H.S.	100.0 (****)	99.9 (****)	100.0 (****)	100.0 (****)	100.0 (****)	99.9 (****)	100.0 (****)				
	Graduated College	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)				
	Unknown	98.4 (0.6)	98.3 (1.1)	98.7 (****)	98.6 (****)	99.9 (****)	98.4 (****)	100.0 (****)				
Type Of School												
	Public	99.8 (0.0)	99.6 (0.1)	99.9 (****)	99.8 (****)	100.0 (****)	99.8 (0.1)	99.9 (****)				
	Nonpublic	100.0 (****)	99.9 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)				
Quartiles												
	Upper	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)				
	Middle two	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)				
	Lower	99.2 (0.2)	98.7 (0.3)	99.6 (****)	99.4 (****)	99.8 (****)	99.3 (0.4)	99.8 (****)				

Standard errors of the estimated percentages appear in parentheses. When no value appears (****), statistical tests involving this value should be interpreted with caution; standard error estimates may not be accurately determined and/or the sampling distribution of the statistic does not match statistical test assumptions (See Procedural Appendix).

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L Indicates that the positive (+) or negative (-) linear trend is significant.

Q Indicates that the positive (+) or negative (-) quadratic trend is significant.

**** Data are unavailable for this assessment year.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table A.12

NAEP 1996 Science Long-Term Trend Assessment — Age 17
Percentages of students with science scale scores at or above 200



		1977	1982	1986	1990	1992	1994	1996	*	‡	L	Q
TOTAL		97.1 (0.2)	95.7 (0.5)	97.1 (0.5)	96.7 (0.3)	97.8 (0.5)	97.1 (0.7)	97.8 (0.3)				+
Gender												
	Male	97.8 (0.2)	96.8 (0.5)	97.4 (0.7)	96.8 (0.5)	98.0 (0.6)	97.1 (0.6)	97.5 (0.5)				
	Female	96.4 (0.3)	94.6 (0.8)	96.9 (0.5)	96.6 (0.6)	97.5 (0.7)	97.2 (1.0)	98.1 (0.4)	+			+
Race/Ethnicity												
	White	99.2 (0.1)	98.6 (0.2)	98.8 (0.3)	99.0 (0.2)	99.3 (0.3)	99.3 (0.3)	99.3 (0.3)				
	Black	83.6 (1.3)	79.7 (1.9)	90.9 (2.1)	88.3 (1.9)	92.1 (1.8)	91.1 (1.9)	93.0 (1.2)	+			+
	Hispanic	93.1 (1.7)	86.9 (2.9)	93.3 (2.4)	91.9 (2.2)	94.6 (2.6)	89.9 (3.3)	94.1 (1.6)				
	Other	97.1 (1.8)	95.1 (2.2)	89.3 (4.8)	96.3 (1.6)	95.1 (2.6)	95.8 (2.8)	98.3 (1.0)				
Grade												
	Below Modal Grade	88.4 (1.1)	85.6 (1.6)	90.7 (2.1)	89.9 (1.6)	92.9 (1.3)	90.7 (1.8)	94.0 (1.1)	+			+
	At Modal Grade	98.5 (0.1)	97.5 (0.4)	98.5 (0.3)	98.6 (0.2)	99.3 (0.3)	98.8 (0.5)	99.0 (0.4)				+
	Above Modal Grade	99.0 (0.3)	97.3 (1.2)	98.0 (****)	98.8 (****)	98.7 (0.7)	98.2 (0.9)	98.7 (****)				
Region												
	Northeast	98.0 (0.4)	95.7 (0.9)	97.1 (1.5)	96.4 (1.1)	98.3 (0.6)	97.1 (1.1)	97.3 (1.0)				
	Southeast	94.2 (0.7)	93.9 (1.5)	96.6 (1.2)	95.8 (0.6)	96.6 (1.0)	97.0 (1.1)	97.6 (0.9)	+			+
	Central	98.0 (0.3)	97.4 (0.7)	98.4 (0.5)	97.8 (0.7)	98.6 (0.8)	97.9 (0.9)	99.3 (****)				
	West	97.3 (0.3)	95.0 (0.9)	96.3 (0.9)	96.7 (0.6)	97.6 (0.9)	96.3 (1.6)	97.2 (0.5)				
Parents' Education Level												
	Less than H.S.	93.1 (0.8)	90.1 (1.6)	91.7 (2.3)	91.7 (2.2)	93.1 (3.3)	89.7 (3.1)	92.3 (2.9)				
	Graduated H.S.	97.3 (0.3)	95.2 (0.8)	96.7 (0.9)	94.9 (1.0)	96.9 (0.9)	96.2 (1.2)	96.4 (0.8)				
	Some Education After H.S.	98.9 (0.2)	98.0 (0.4)	98.6 (0.8)	98.7 (0.5)	98.8 (0.7)	98.4 (0.7)	99.0 (0.4)				
	Graduated College	99.5 (0.1)	98.2 (0.3)	99.2 (0.3)	98.7 (0.3)	98.9 (0.5)	99.0 (0.4)	99.0 (0.3)				
	Unknown	85.8 (1.6)	85.4 (3.2)	83.9 (5.0)	84.8 (5.0)	90.3 (4.0)	84.3 (4.8)	89.3 (7.0)				
Type Of School												
	Public	97.0 (0.2)	95.4 (0.6)	97.0 (0.5)	96.5 (0.4)	97.5 (0.5)	96.8 (0.7)	97.7 (0.4)				+
	Nonpublic	99.5 (0.2)	97.9 (0.7)	99.8 (****)	99.5 (****)	100.0 (****)	99.3 (0.4)	99.0 (****)				
Quartiles												
	Upper	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)				
	Middle two	99.9 (0.1)	99.7 (0.1)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)				
	Lower	88.7 (0.7)	83.2 (1.6)	88.5 (1.7)	86.8 (1.2)	91.1 (1.7)	88.3 (2.3)	91.3 (1.2)				+

Standard errors of the estimated percentages appear in parentheses. When no value appears (****), statistical tests involving this value should be interpreted with caution; standard error estimates may not be accurately determined and/or the sampling distribution of the statistic does not match statistical test assumptions (See Procedural Appendix).

* Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1977.

‡ Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1994.

L Indicates that the positive (+) or negative (-) linear trend is significant.

Q Indicates that the positive (+) or negative (-) quadratic trend is significant.

**** Data are unavailable for this assessment year.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table A.13

NAEP 1996 Science Long-Term Trend Assessment — Age 17
Percentages of students with science scale scores at or above 250



		1977	1982	1986	1990	1992	1994	1996	*	‡	L	Q
TOTAL		81.6 (0.7)	76.6 (1.0)	80.7 (1.3)	81.2 (0.9)	83.3 (1.2)	83.1 (1.2)	83.8 (0.9)			+	+
Gender												
	Male	85.2 (0.7)	81.2 (1.2)	82.4 (1.4)	82.5 (1.2)	85.0 (1.4)	84.9 (1.3)	83.8 (1.1)				
	Female	78.0 (1.0)	72.2 (1.3)	79.1 (1.7)	79.9 (1.4)	81.6 (1.4)	81.6 (1.6)	83.7 (1.1)	+		+	+
Race/Ethnicity												
	White	88.2 (0.4)	84.9 (0.9)	87.8 (1.4)	89.6 (0.8)	90.5 (1.0)	91.5 (0.9)	91.2 (0.7)	+		+	
	Black	40.5 (1.5)	35.0 (2.1)	52.2 (3.2)	51.4 (3.7)	55.7 (3.7)	58.1 (3.7)	59.8 (3.2)	+		+	
	Hispanic	61.5 (1.7)	48.0 (2.7)	60.0 (7.2)	59.9 (5.0)	68.3 (6.6)	58.6 (7.4)	67.6 (4.5)				
	Other	78.7 (2.9)	65.4 (5.8)	71.0 (7.0)	79.2 (3.8)	78.4 (4.4)	82.7 (5.0)	79.5 (6.0)				
Grade												
	Below Modal Grade	53.6 (1.4)	49.9 (2.6)	58.1 (2.8)	59.5 (2.5)	61.0 (3.1)	60.2 (2.9)	67.2 (2.5)	+		+	
	At Modal Grade	86.0 (0.6)	81.3 (1.0)	85.2 (1.4)	87.2 (0.8)	90.5 (0.9)	89.1 (0.8)	89.3 (0.8)	+		+	+
	Above Modal Grade	88.2 (1.0)	83.0 (2.4)	86.8 (2.6)	86.8 (2.3)	88.7 (2.9)	89.2 (3.1)	84.4 (3.0)				
Region												
	Northeast	85.4 (1.6)	77.5 (1.9)	80.8 (3.9)	82.1 (2.8)	85.8 (2.3)	85.5 (2.9)	83.9 (2.4)				
	Southeast	72.2 (1.5)	71.2 (2.3)	76.9 (1.9)	76.8 (2.2)	76.1 (2.0)	80.2 (2.4)	78.9 (1.9)			+	
	Central	85.1 (1.1)	81.1 (2.3)	85.7 (1.8)	86.9 (2.0)	90.3 (2.2)	85.4 (2.9)	91.1 (1.6)	+		+	
	West	79.9 (1.2)	74.8 (2.5)	78.8 (3.0)	79.0 (1.9)	81.7 (3.0)	81.7 (3.0)	81.2 (2.1)				
Parents' Education Level												
	Less than H.S.	64.8 (1.5)	58.2 (2.6)	59.8 (3.5)	62.0 (4.3)	61.2 (4.8)	57.0 (5.3)	57.5 (5.5)				
	Graduated H.S.	80.0 (1.0)	72.3 (1.5)	74.1 (2.1)	73.4 (1.5)	76.6 (2.5)	75.6 (2.1)	76.4 (2.3)				+
	Some Education After H.S.	87.0 (0.8)	83.1 (1.4)	86.8 (1.9)	88.1 (1.6)	87.5 (1.3)	86.6 (1.6)	87.7 (1.3)				
	Graduated College	92.9 (0.5)	86.7 (1.4)	89.6 (1.4)	88.9 (1.1)	90.2 (1.3)	92.1 (0.8)	90.1 (1.3)				+
	Unknown	52.7 (2.6)	52.1 (4.2)	47.4 (7.9)	48.5 (5.5)	54.1 (7.5)	45.7 (6.7)	53.3 (7.8)				
Type Of School												
	Public	80.8 (0.7)	75.8 (1.0)	80.1 (1.4)	80.4 (0.9)	82.0 (1.2)	81.7 (1.3)	83.2 (1.0)			+	+
	Nonpublic	92.9 (1.2)	83.5 (2.8)	96.5 (2.2)	90.6 (4.1)	95.5 (2.0)	93.1 (2.3)	90.1 (3.0)				
Quartiles												
	Upper	99.7 (0.1)	99.5 (0.2)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)				
	Middle two	91.9 (0.4)	88.1 (0.7)	95.8 (0.6)	96.5 (0.6)	97.5 (0.6)	97.6 (0.6)	97.9 (0.9)	+		+	
	Lower	42.6 (1.1)	30.5 (1.5)	31.2 (2.4)	31.7 (2.2)	38.2 (3.0)	37.3 (2.3)	39.2 (2.9)				+

Standard errors of the estimated percentages appear in parentheses. When no value appears (****), statistical tests involving this value should be interpreted with caution; standard error estimates may not be accurately determined and/or the sampling distribution of the statistic does not match statistical test assumptions (See Procedural Appendix).

* Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1977.

‡ Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1994.

L Indicates that the positive (+) or negative (-) linear trend is significant.

Q Indicates that the positive (+) or negative (-) quadratic trend is significant.

**** Data are unavailable for this assessment year.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table A.14

NAEP 1996 Science Long-Term Trend Assessment — Age 17
Percentages of students with science scale scores at or above 300



	1977	1982	1986	1990	1992	1994	1996	*	‡	L	Q
TOTAL	41.7 (0.9)	37.3 (0.9)	41.3 (1.4)	43.3 (1.3)	46.6 (1.5)	47.5 (1.3)	48.4 (1.3)	+	+	+	
Gender											
Male	48.8 (1.1)	45.2 (1.2)	48.8 (2.1)	48.2 (1.6)	50.9 (2.0)	52.9 (1.8)	53.1 (1.5)	+		+	
Female	34.8 (1.0)	29.9 (1.2)	34.1 (1.5)	38.7 (1.7)	42.0 (1.7)	42.4 (1.8)	43.9 (1.7)	+		+	+
Race/Ethnicity											
White	47.5 (0.7)	43.9 (1.1)	48.7 (1.7)	51.2 (1.5)	55.4 (1.7)	57.5 (1.6)	58.5 (1.6)	+		+	+
Black	7.7 (1.0)	6.5 (1.1)	12.5 (2.2)	15.7 (4.0)	14.1 (2.5)	15.4 (2.3)	17.7 (2.7)	+		+	
Hispanic	18.5 (2.1)	11.1 (2.0)	14.8 (2.9)	21.1 (3.3)	23.0 (3.8)	21.7 (4.1)	23.9 (2.5)				+
Other	36.6 (3.8)	25.2 (4.8)	35.0 (8.1)	45.2 (6.5)	42.9 (6.1)	44.4 (8.0)	46.8 (7.5)				
Grade											
Below Modal Grade	14.5 (0.9)	16.0 (1.8)	17.9 (1.9)	19.6 (1.5)	19.1 (2.2)	22.0 (2.3)	27.3 (2.5)	+		+	
At Modal Grade	45.7 (0.8)	40.7 (1.1)	45.6 (1.7)	50.0 (1.5)	55.2 (1.7)	54.2 (1.4)	55.1 (1.5)	+		+	+
Above Modal Grade	50.5 (1.8)	45.4 (3.2)	50.6 (5.9)	49.2 (3.2)	54.9 (3.4)	52.8 (4.3)	53.8 (5.5)				
Region											
Northeast	47.9 (1.8)	38.3 (1.9)	46.6 (4.0)	45.7 (2.7)	52.0 (2.5)	52.0 (3.6)	48.4 (4.0)				
Southeast	31.6 (1.8)	32.2 (2.2)	37.0 (2.0)	37.5 (2.7)	36.9 (2.8)	40.9 (2.5)	41.2 (2.9)	+		+	
Central	45.0 (1.3)	42.1 (2.2)	45.0 (2.5)	51.7 (3.1)	56.4 (2.6)	51.1 (2.7)	59.0 (3.2)	+		+	
West	38.6 (1.4)	35.0 (2.2)	36.3 (3.5)	38.7 (2.5)	42.2 (3.4)	46.2 (3.5)	45.2 (2.3)				+
Parents' Education Level											
Less than H.S.	21.6 (1.0)	17.3 (1.7)	14.9 (2.4)	18.2 (2.8)	16.8 (2.5)	14.7 (2.3)	15.6 (3.0)				
Graduated H.S.	35.8 (0.8)	29.5 (1.3)	29.5 (2.0)	30.8 (1.5)	32.1 (2.7)	32.8 (2.4)	36.3 (3.1)				+
Some Education After H.S.	46.0 (1.3)	41.6 (2.1)	46.7 (3.0)	46.7 (1.9)	48.5 (2.1)	47.2 (2.2)	48.8 (2.4)				
Graduated College	59.6 (1.2)	52.5 (1.9)	55.3 (2.4)	57.3 (2.0)	60.0 (1.7)	62.6 (1.9)	59.5 (1.6)				+
Unknown	16.6 (2.3)	15.5 (2.9)	11.4 (4.4)	13.5 (3.9)	18.3 (5.9)	14.4 (4.1)	21.2 (4.8)				
Type Of School											
Public	40.5 (0.8)	36.6 (0.9)	39.9 (1.5)	42.0 (1.3)	44.8 (1.5)	45.3 (1.1)	47.7 (1.3)	+		+	+
Nonpublic	58.9 (2.8)	44.2 (2.6)	74.6 (10.9)	59.8 (6.7)	63.1 (5.3)	62.7 (5.2)	56.3 (7.0)				
Quartiles											
Upper	86.6 (0.9)	82.8 (1.3)	96.7 (1.0)	98.4 (0.5)	99.4 (0.3)	99.5 (****)	99.1 (0.4)	+			
Middle two	38.2 (0.9)	32.5 (1.1)	34.1 (1.2)	37.3 (1.6)	43.2 (2.3)	44.8 (1.3)	47.1 (1.5)	+		+	+
Lower	3.8 (0.4)	1.7 (0.3)	0.3 (****)	0.4 (****)	0.5 (0.3)	0.6 (0.4)	0.6 (****)				

Standard errors of the estimated percentages appear in parentheses. When no value appears (****), statistical tests involving this value should be interpreted with caution; standard error estimates may not be accurately determined and/or the sampling distribution of the statistic does not match statistical test assumptions (See Procedural Appendix).

* Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1977.

‡ Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1994.

L Indicates that the positive (+) or negative (-) linear trend is significant.

Q Indicates that the positive (+) or negative (-) quadratic trend is significant.

**** Data are unavailable for this assessment year.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table A.15

NAEP 1996 Science Long-Term Trend Assessment — Age 17
Percentages of students with science scale scores at or above 350



	1977	1982	1986	1990	1992	1994	1996	*	‡	L	Q	
TOTAL	8.5 (0.4)	7.1 (0.4)	7.9 (0.7)	9.2 (0.5)	10.1 (0.7)	10.0 (0.8)	10.8 (1.0)				+	+
Gender												
Male	11.8 (0.6)	10.4 (0.8)	11.4 (1.3)	13.0 (0.8)	13.6 (1.0)	13.8 (1.2)	14.2 (1.4)					+
Female	5.3 (0.4)	3.9 (0.4)	4.5 (0.8)	5.5 (0.5)	6.6 (1.0)	6.4 (0.6)	7.4 (1.0)					+
Race/Ethnicity												
White	10.0 (0.4)	8.6 (0.6)	9.6 (0.9)	11.4 (0.7)	12.8 (0.9)	13.2 (1.1)	13.8 (1.4)					+
Black	0.4 (0.2)	0.2 (0.2)	0.9 (0.6)	1.5 (0.8)	0.8 (****)	0.5 (0.3)	0.8 (0.5)					
Hispanic	1.8 (0.6)	1.4 (0.9)	1.1 (0.7)	2.1 (****)	2.5 (1.2)	1.5 (0.7)	3.0 (1.4)					
Other	6.3 (2.2)	2.8 (1.9)	8.6 (****)	11.6 (4.1)	10.2 (2.8)	7.3 (2.8)	12.9 (4.3)					
Grade												
Below Modal Grade	1.3 (0.3)	2.0 (0.6)	2.0 (0.9)	2.6 (0.8)	2.4 (0.7)	3.2 (0.9)	3.4 (1.2)					
At Modal Grade	9.3 (0.4)	7.8 (0.6)	8.7 (0.9)	10.9 (0.6)	12.3 (0.8)	11.7 (1.0)	12.9 (1.4)					+
Above Modal Grade	12.6 (1.0)	9.6 (1.0)	12.1 (3.2)	12.1 (3.0)	16.0 (4.0)	13.4 (3.4)	14.2 (2.7)					
Region												
Northeast	10.8 (0.9)	7.6 (0.9)	10.8 (1.9)	10.2 (1.1)	12.9 (1.9)	13.2 (2.2)	11.0 (2.1)					
Southeast	5.2 (0.7)	5.7 (0.9)	6.0 (1.2)	6.7 (1.0)	6.2 (0.7)	6.8 (1.4)	7.9 (1.5)					
Central	9.6 (0.6)	7.9 (1.2)	8.7 (1.7)	12.5 (1.2)	13.1 (1.4)	11.0 (1.5)	14.6 (2.1)					+
West	7.2 (0.8)	6.7 (0.8)	5.9 (1.7)	7.4 (1.1)	8.9 (1.9)	9.4 (2.2)	9.6 (1.4)					
Parents' Education Level												
Less than H.S.	2.2 (0.3)	1.9 (0.6)	0.7 (****)	1.3 (0.7)	1.6 (0.6)	0.9 (****)	2.1 (****)					
Graduated H.S.	5.7 (0.3)	3.9 (0.7)	3.7 (0.8)	3.8 (0.8)	4.8 (1.2)	3.6 (1.0)	5.2 (1.4)					
Some Education After H.S.	8.7 (0.8)	7.4 (1.2)	8.0 (1.4)	8.8 (0.9)	7.8 (1.0)	7.2 (0.9)	8.1 (1.5)					
Graduated College	15.7 (0.8)	12.4 (0.8)	13.2 (1.4)	15.3 (0.9)	16.3 (1.2)	16.7 (1.5)	16.4 (1.5)					
Unknown	1.7 (0.6)	1.8 (1.0)	1.0 (****)	0.8 (****)	2.4 (****)	2.4 (****)	1.3 (****)					
Type Of School												
Public	8.1 (0.4)	6.9 (0.4)	7.2 (0.7)	8.7 (0.5)	9.6 (0.8)	9.4 (0.5)	10.5 (1.1)					+
Nonpublic	14.8 (1.9)	8.5 (2.3)	23.1 (7.7)	15.8 (3.2)	14.1 (2.7)	14.8 (4.0)	13.0 (3.1)					+
Quartiles												
Upper	29.2 (1.1)	24.5 (1.4)	31.1 (2.0)	36.3 (1.5)	39.7 (2.0)	39.2 (2.0)	42.2 (3.5)	+				+
Middle two	2.4 (0.2)	1.9 (0.2)	0.2 (0.1)	0.2 (****)	0.5 (0.3)	0.4 (0.2)	0.5 (0.3)	-				
Lower	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)					

Standard errors of the estimated percentages appear in parentheses. When no value appears (****), statistical tests involving this value should be interpreted with caution; standard error estimates may not be accurately determined and/or the sampling distribution of the statistic does not match statistical test assumptions (See Procedural Appendix).

* Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1977.

‡ Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1994.

L Indicates that the positive (+) or negative (-) linear trend is significant.

Q Indicates that the positive (+) or negative (-) quadratic trend is significant.

**** Data are unavailable for this assessment year.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table A.16

NAEP 1996 Long-Term Trend Science Results — Age 9
Scale Score Means, Standard Deviations, and Percentiles



	1977	1982	1986	1990	1992	1994	1996
TOTAL SAMPLE							
Mean	219.9 (1.2)	220.8 (1.8)	224.3 (1.2)	228.7 (0.8)	230.6 (1.0)	231.0 (1.2)	229.7 (1.2)
Standard Deviation	44.9 (0.6)	40.9 (1.4)	41.6 (0.6)	40.2 (0.4)	39.9 (0.7)	40.9 (0.5)	42.1 (0.6)
<i>Percentiles</i>							
5	143.8 (2.3)	150.9 (4.9)	155.0 (1.3)	159.8 (1.3)	162.8 (2.0)	161.1 (1.7)	158.9 (1.5)
10	160.9 (2.1)	166.8 (2.6)	169.9 (1.8)	176.1 (1.1)	177.8 (1.8)	177.0 (1.7)	174.2 (1.8)
25	190.1 (1.6)	194.4 (2.2)	195.9 (1.3)	202.0 (1.4)	203.8 (1.6)	203.4 (1.6)	201.4 (1.3)
50	221.5 (1.1)	221.4 (2.4)	225.1 (1.7)	230.3 (0.9)	232.1 (0.9)	233.2 (1.9)	230.9 (1.6)
75	251.0 (1.1)	249.0 (2.0)	253.1 (1.7)	256.6 (0.8)	258.4 (1.0)	259.6 (1.1)	259.0 (1.9)
90	276.5 (1.2)	272.4 (3.9)	276.9 (2.0)	278.8 (1.3)	280.6 (1.6)	281.5 (0.9)	283.2 (1.4)
95	291.4 (1.2)	286.4 (3.7)	290.9 (1.9)	292.1 (1.4)	293.6 (1.4)	295.1 (1.4)	297.6 (1.7)
MALE STUDENTS							
Mean	222.1 (1.3)	221.0 (2.3)	227.3 (1.4)	230.3 (1.1)	234.7 (1.2)	232.2 (1.3)	231.5 (1.7)
Standard Deviation	45.0 (0.7)	42.0 (2.0)	41.9 (0.7)	41.9 (0.6)	40.7 (1.0)	41.8 (0.7)	42.8 (0.7)
<i>Percentiles</i>							
5	146.8 (2.6)	150.4 (5.5)	158.0 (3.6)	159.6 (2.2)	164.7 (3.0)	161.1 (3.9)	159.5 (2.1)
10	163.2 (1.9)	166.5 (3.8)	172.9 (1.8)	176.3 (2.3)	180.9 (2.7)	176.9 (2.1)	175.8 (2.0)
25	191.9 (1.9)	193.5 (4.1)	198.7 (1.8)	202.1 (2.5)	207.2 (1.9)	203.7 (1.5)	202.4 (2.2)
50	223.6 (1.4)	221.3 (3.6)	227.9 (1.7)	231.6 (1.9)	236.2 (1.5)	234.1 (1.6)	231.9 (2.5)
75	253.4 (1.4)	250.4 (3.1)	256.1 (1.9)	259.4 (1.0)	263.1 (1.5)	261.8 (1.1)	261.6 (2.3)
90	279.1 (1.3)	274.7 (4.3)	280.3 (2.0)	283.3 (1.8)	285.8 (1.5)	284.4 (1.7)	286.3 (2.1)
95	294.2 (1.5)	287.1 (5.3)	294.8 (2.7)	296.3 (2.4)	298.6 (1.5)	298.3 (2.3)	300.7 (2.6)
FEMALE STUDENTS							
Mean	217.6 (1.2)	220.7 (2.0)	221.3 (1.4)	227.1 (1.0)	226.7 (1.0)	230.0 (1.4)	228.0 (1.5)
Standard Deviation	44.6 (0.8)	39.8 (1.3)	41.1 (0.8)	38.4 (0.5)	38.8 (0.6)	39.9 (0.7)	41.3 (1.0)
<i>Percentiles</i>							
5	141.3 (3.5)	151.2 (6.6)	152.5 (2.5)	159.9 (2.4)	161.0 (3.4)	161.8 (3.1)	157.9 (4.3)
10	158.5 (2.2)	167.5 (3.1)	166.9 (2.6)	175.8 (2.2)	175.3 (2.2)	177.2 (2.9)	172.6 (2.1)
25	188.3 (1.4)	195.3 (2.6)	193.2 (1.8)	201.9 (1.2)	200.9 (1.5)	203.1 (1.9)	200.5 (1.5)
50	219.5 (1.2)	221.4 (3.6)	222.5 (2.0)	229.2 (1.1)	228.5 (1.4)	232.5 (2.5)	229.8 (1.9)
75	248.6 (1.1)	247.4 (2.4)	250.2 (1.9)	254.0 (1.1)	253.7 (1.5)	257.7 (1.2)	256.7 (2.2)
90	273.8 (1.6)	270.6 (3.4)	273.3 (1.6)	274.6 (1.9)	275.0 (1.7)	279.2 (1.7)	279.4 (2.3)
95	288.2 (1.6)	284.4 (3.3)	287.0 (2.6)	287.0 (1.9)	287.7 (1.2)	291.6 (1.2)	293.7 (3.2)

The standard errors of the estimated scale scores appear in parentheses.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table A.16
(continued)

NAEP 1996 Long-Term Trend Science Results — Age 9
Scale Score Means, Standard Deviations, and Percentiles



	1977	1982	1986	1990	1992	1994	1996
WHITE STUDENTS							
Mean	229.6 (0.9)	229.0 (1.9)	231.9 (1.2)	237.5 (0.8)	239.1 (1.0)	240.3 (1.3)	239.0 (1.4)
Standard Deviation	40.0 (0.5)	37.6 (1.3)	39.2 (0.7)	36.3 (0.4)	36.4 (0.5)	37.1 (0.6)	39.6 (0.7)
<i>Percentiles</i>							
5	163.2 (1.3)	167.0 (3.0)	166.5 (2.3)	176.9 (1.4)	178.0 (2.0)	177.2 (2.3)	172.1 (2.5)
10	177.6 (1.1)	182.2 (3.1)	181.0 (1.5)	189.9 (1.3)	191.7 (1.5)	191.3 (1.8)	187.2 (1.7)
25	202.4 (1.1)	203.8 (2.6)	205.5 (1.5)	212.6 (0.8)	214.5 (1.3)	215.3 (1.2)	212.4 (1.5)
50	229.8 (0.9)	228.6 (2.4)	232.5 (1.6)	238.3 (1.0)	240.0 (1.1)	241.8 (1.4)	239.7 (1.4)
75	256.9 (0.8)	254.9 (2.0)	258.8 (1.4)	262.3 (1.0)	264.2 (1.3)	265.7 (1.5)	266.3 (1.8)
90	281.1 (1.1)	277.6 (2.8)	281.7 (1.7)	283.5 (1.4)	285.1 (1.6)	286.5 (1.0)	289.0 (2.9)
95	295.4 (1.9)	290.8 (4.0)	294.9 (2.5)	295.7 (1.3)	297.5 (0.8)	299.6 (2.6)	302.9 (1.5)
BLACK STUDENTS							
Mean	174.8 (1.8)	187.0 (3.0)	196.2 (1.9)	196.4 (2.0)	200.3 (2.7)	201.4 (1.7)	201.9 (3.0)
Standard Deviation	41.4 (1.0)	37.7 (1.9)	38.3 (1.0)	38.6 (1.0)	37.3 (0.7)	38.2 (1.4)	38.1 (1.0)
<i>Percentiles</i>							
5	107.0 (3.5)	123.6 (11.0)	132.8 (3.2)	131.3 (4.2)	138.0 (4.2)	138.4 (2.7)	139.3 (3.8)
10	122.8 (3.4)	136.7 (8.3)	146.9 (3.5)	145.3 (3.8)	151.6 (4.0)	152.5 (3.2)	152.6 (5.0)
25	146.6 (2.4)	159.2 (4.9)	169.7 (2.6)	169.8 (2.6)	173.7 (3.5)	175.2 (2.8)	175.7 (3.8)
50	173.8 (2.5)	188.2 (5.0)	195.9 (2.2)	196.3 (2.5)	201.1 (3.0)	201.5 (2.3)	202.5 (4.3)
75	202.9 (1.8)	214.4 (3.8)	222.6 (1.5)	224.1 (1.7)	226.3 (3.4)	227.5 (3.3)	228.1 (4.1)
90	229.2 (2.9)	236.4 (4.7)	246.4 (3.7)	246.8 (2.4)	248.4 (3.0)	252.2 (2.4)	251.0 (4.1)
95	244.1 (2.9)	246.5 (3.3)	259.5 (3.5)	260.0 (5.4)	260.5 (4.6)	263.2 (1.6)	263.6 (4.8)
HISPANIC STUDENTS							
Mean	191.9 (2.7)	189.0 (4.2)	199.4 (3.1)	206.2 (2.2)	204.7 (2.8)	201.0 (2.7)	207.1 (2.8)
Standard Deviation	41.2 (1.4)	36.6 (2.3)	38.9 (1.6)	37.0 (1.7)	37.3 (1.4)	38.6 (2.0)	38.1 (1.3)
<i>Percentiles</i>							
5	125.2 (7.0)	127.3 (9.6)	134.1 (10.1)	146.2 (5.5)	143.0 (3.0)	138.7 (9.1)	143.2 (3.8)
10	139.8 (3.3)	141.9 (16.8)	148.1 (5.2)	158.6 (4.3)	156.8 (3.9)	152.0 (4.1)	156.8 (5.7)
25	163.9 (4.3)	161.9 (7.4)	172.6 (3.4)	180.6 (3.7)	179.1 (3.5)	175.5 (3.4)	180.5 (4.1)
50	191.4 (3.6)	190.8 (4.8)	199.8 (6.7)	206.2 (3.7)	204.8 (4.1)	199.7 (2.2)	207.7 (3.9)
75	219.0 (3.2)	215.9 (3.4)	225.6 (4.1)	232.7 (4.1)	230.4 (2.3)	227.3 (4.8)	235.4 (4.4)
90	245.7 (4.9)	236.2 (5.6)	252.1 (5.4)	252.9 (4.4)	253.7 (5.5)	251.2 (6.5)	255.2 (5.2)
95	261.3 (6.4)	246.0 (7.6)	264.9 (6.7)	266.8 (6.9)	264.9 (3.5)	264.4 (4.3)	268.0 (5.1)

The standard errors of the estimated scale scores appear in parentheses.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table A.17

NAEP 1996 Long-Term Trend Science Results — Age 13
Scale Score Means, Standard Deviations, and Percentiles



	1977	1982	1986	1990	1992	1994	1996
TOTAL SAMPLE							
Mean	247.4 (1.1)	250.1 (1.3)	251.4 (1.4)	255.2 (0.9)	258.0 (0.8)	256.8 (1.0)	256.0 (1.0)
Standard Deviation	43.5 (0.4)	38.6 (0.5)	36.6 (0.6)	37.6 (0.7)	36.9 (0.5)	37.2 (0.7)	38.4 (0.6)
<i>Percentiles</i>							
5	173.7 (1.7)	185.2 (2.2)	188.9 (2.2)	191.4 (2.0)	193.1 (1.5)	191.0 (1.7)	190.9 (2.5)
10	190.6 (1.4)	199.6 (1.8)	203.3 (2.0)	205.9 (1.7)	208.9 (1.3)	206.7 (1.4)	204.9 (1.9)
25	218.4 (1.4)	224.1 (1.1)	227.2 (1.3)	230.0 (1.5)	234.7 (1.3)	232.7 (1.3)	230.3 (1.4)
50	248.6 (1.2)	250.9 (1.3)	252.1 (1.8)	256.4 (1.2)	260.4 (1.0)	259.2 (0.9)	257.5 (1.3)
75	277.5 (0.9)	276.7 (1.5)	276.5 (1.5)	281.1 (0.9)	283.8 (1.0)	283.0 (1.1)	283.0 (1.2)
90	302.4 (0.9)	299.2 (1.6)	298.2 (2.0)	302.4 (1.1)	303.1 (1.2)	303.1 (1.7)	304.2 (1.2)
95	316.9 (1.5)	312.8 (1.3)	310.3 (1.6)	315.1 (1.9)	314.6 (1.4)	314.3 (1.9)	316.7 (2.1)
MALE STUDENTS							
Mean	251.1 (1.3)	255.6 (1.5)	256.1 (1.6)	258.5 (1.1)	260.1 (1.2)	259.4 (1.2)	260.5 (1.0)
Standard Deviation	43.9 (0.5)	38.7 (0.6)	37.4 (1.0)	38.8 (0.8)	38.0 (0.8)	39.0 (0.8)	39.0 (0.7)
<i>Percentiles</i>							
5	176.7 (1.9)	190.2 (2.6)	192.3 (4.2)	191.9 (2.5)	193.4 (2.7)	189.6 (2.5)	194.3 (2.4)
10	193.5 (1.6)	204.4 (1.6)	207.2 (2.5)	207.3 (3.4)	209.4 (2.4)	206.2 (1.6)	208.8 (1.7)
25	221.5 (1.7)	229.5 (1.7)	231.1 (1.6)	232.9 (1.4)	235.8 (1.1)	234.4 (1.4)	233.8 (2.1)
50	252.4 (1.5)	256.7 (1.5)	256.9 (2.0)	260.3 (1.4)	262.7 (1.5)	262.0 (1.6)	262.2 (1.3)
75	281.6 (1.2)	282.6 (1.5)	282.4 (1.4)	285.8 (2.2)	287.0 (1.8)	287.4 (1.9)	288.3 (1.4)
90	306.5 (1.3)	305.0 (1.7)	303.4 (1.6)	307.4 (1.5)	306.4 (1.8)	307.4 (2.3)	309.0 (1.8)
95	321.2 (1.5)	318.3 (2.3)	316.2 (2.2)	320.2 (1.2)	318.1 (1.6)	318.8 (2.2)	321.5 (2.8)
FEMALE STUDENTS							
Mean	243.7 (1.2)	245.0 (1.3)	246.9 (1.5)	251.8 (1.1)	256.0 (1.0)	254.3 (1.2)	251.7 (1.3)
Standard Deviation	42.8 (0.5)	37.9 (0.7)	35.3 (0.6)	36.1 (0.8)	35.7 (0.8)	35.2 (0.8)	37.3 (0.9)
<i>Percentiles</i>							
5	170.8 (1.6)	180.2 (1.9)	186.3 (2.1)	190.6 (2.1)	192.7 (1.6)	192.4 (1.8)	187.9 (2.7)
10	187.7 (1.8)	195.5 (2.3)	200.5 (2.9)	204.8 (1.5)	208.4 (1.4)	207.2 (2.0)	201.8 (2.7)
25	215.5 (1.7)	219.7 (1.4)	223.4 (1.5)	227.8 (1.6)	233.4 (1.3)	231.3 (1.9)	227.2 (2.1)
50	245.0 (1.2)	246.1 (1.7)	248.0 (1.7)	253.1 (1.2)	258.2 (1.4)	256.3 (1.3)	253.6 (2.0)
75	273.0 (1.5)	271.0 (1.9)	271.0 (1.8)	276.8 (1.6)	280.7 (1.9)	278.9 (1.5)	277.3 (1.9)
90	297.7 (1.0)	292.8 (1.5)	291.3 (1.7)	296.8 (1.1)	299.8 (1.1)	297.7 (2.1)	298.3 (1.9)
95	312.1 (2.2)	305.3 (1.8)	304.0 (3.6)	308.6 (1.4)	311.1 (1.7)	308.4 (2.1)	310.8 (1.8)

The standard errors of the estimated scale scores appear in parentheses.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table A.17
(continued)

NAEP 1996 Long-Term Trend Science Results — Age 13
Scale Score Means, Standard Deviations, and Percentiles



	1977	1982	1986	1990	1992	1994	1996
WHITE STUDENTS							
Mean	256.1 (0.8)	257.3 (1.1)	259.2 (1.4)	264.1 (0.9)	267.1 (1.0)	266.5 (1.0)	265.9 (1.1)
Standard Deviation	39.5 (0.3)	35.7 (0.6)	33.6 (0.8)	33.8 (0.5)	31.8 (0.6)	32.1 (0.8)	34.3 (0.6)
<i>Percentiles</i>							
5	190.8 (0.9)	198.0 (1.7)	203.5 (2.7)	208.6 (1.6)	212.6 (2.2)	211.9 (1.6)	208.3 (2.8)
10	205.2 (1.2)	210.8 (1.7)	215.8 (1.5)	220.4 (1.2)	225.7 (1.6)	225.3 (1.2)	221.4 (1.8)
25	229.3 (1.3)	233.2 (1.2)	237.0 (1.9)	241.3 (0.9)	246.1 (1.1)	245.3 (1.1)	243.0 (1.1)
50	256.3 (0.8)	257.6 (1.3)	259.2 (2.0)	264.5 (1.1)	267.8 (1.1)	267.3 (1.3)	266.6 (1.4)
75	282.9 (0.7)	281.5 (1.1)	282.3 (1.9)	287.0 (1.7)	289.0 (1.2)	288.6 (1.5)	289.3 (1.1)
90	306.6 (0.9)	302.7 (1.6)	302.2 (1.9)	307.1 (1.4)	307.1 (1.6)	307.1 (1.8)	309.3 (1.8)
95	320.8 (1.1)	316.2 (1.7)	313.9 (2.1)	319.4 (1.3)	318.0 (1.4)	317.6 (2.7)	321.4 (2.6)
BLACK STUDENTS							
Mean	208.1 (2.4)	217.1 (1.3)	221.6 (2.5)	225.7 (3.1)	224.4 (2.7)	223.9 (4.2)	225.7 (2.1)
Standard Deviation	39.7 (0.9)	34.6 (1.2)	33.0 (0.9)	34.3 (1.7)	37.1 (1.3)	35.7 (2.6)	35.3 (1.2)
<i>Percentiles</i>							
5	144.3 (3.2)	160.3 (3.1)	167.8 (1.7)	169.7 (5.5)	162.1 (3.7)	167.7 (5.9)	167.5 (5.9)
10	157.7 (2.4)	173.0 (3.1)	180.1 (2.2)	181.8 (6.1)	177.0 (3.8)	179.7 (5.5)	181.2 (4.4)
25	180.5 (2.2)	193.7 (2.4)	198.3 (3.0)	202.3 (3.7)	198.9 (3.6)	198.0 (3.6)	200.9 (2.9)
50	207.4 (2.5)	216.8 (1.3)	221.2 (2.8)	225.7 (3.0)	223.8 (2.4)	222.6 (5.3)	224.5 (2.4)
75	234.8 (2.6)	240.7 (2.2)	243.5 (3.6)	249.1 (2.6)	251.4 (3.6)	246.9 (4.2)	250.6 (3.4)
90	259.5 (3.4)	262.2 (3.5)	264.4 (4.9)	269.0 (4.2)	272.0 (2.7)	271.9 (7.0)	270.8 (2.8)
95	274.6 (2.7)	274.7 (1.9)	276.8 (2.5)	283.2 (3.7)	286.0 (7.6)	286.5 (13.3)	285.7 (3.5)
HISPANIC STUDENTS							
Mean	213.4 (1.9)	225.5 (3.9)	226.1 (3.1)	231.6 (2.6)	237.5 (2.6)	232.1 (2.4)	232.2 (2.5)
Standard Deviation	40.4 (1.2)	36.2 (1.1)	34.2 (1.2)	36.6 (1.0)	34.0 (1.2)	34.9 (1.1)	35.4 (0.8)
<i>Percentiles</i>							
5	147.1 (3.5)	166.3 (4.9)	171.1 (5.6)	173.7 (4.7)	180.3 (3.7)	175.2 (3.1)	174.7 (3.1)
10	161.4 (3.0)	179.4 (4.1)	181.3 (4.5)	185.3 (4.5)	193.0 (6.4)	187.3 (1.8)	186.9 (2.7)
25	185.8 (3.5)	200.7 (3.6)	201.6 (5.5)	205.9 (4.1)	215.2 (3.8)	206.9 (3.3)	208.0 (3.1)
50	213.3 (2.5)	225.9 (4.4)	225.6 (3.8)	230.9 (3.3)	237.9 (4.5)	231.4 (2.7)	231.2 (3.0)
75	240.3 (3.5)	249.3 (5.1)	249.8 (3.4)	256.4 (5.1)	260.9 (3.4)	257.8 (5.0)	256.1 (3.5)
90	265.8 (2.0)	271.2 (5.1)	269.9 (3.5)	280.0 (5.9)	281.8 (2.5)	276.8 (7.1)	279.7 (3.9)
95	282.1 (4.4)	284.8 (6.1)	283.0 (3.8)	294.2 (2.8)	292.1 (4.2)	289.7 (6.8)	292.5 (10.9)

The standard errors of the estimated scale scores appear in parentheses.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table A.18

NAEP 1996 Long-Term Trend Science Results — Age 17
Scale Score Means, Standard Deviations, and Percentiles



	1977	1982	1986	1990	1992	1994	1996
TOTAL SAMPLE							
Mean	289.5 (1.0)	283.3 (1.2)	288.5 (1.4)	290.4 (1.1)	294.1 (1.3)	294.0 (1.6)	295.7 (1.2)
Standard Deviation	45.0 (0.4)	46.7 (0.7)	44.4 (1.0)	46.2 (0.6)	44.7 (0.8)	45.6 (1.1)	45.1 (0.9)
<i>Percentiles</i>							
5	212.6 (1.3)	203.2 (2.2)	211.8 (2.4)	209.9 (2.3)	217.7 (2.1)	212.3 (4.3)	217.5 (2.8)
10	231.3 (1.4)	221.5 (1.9)	229.5 (2.4)	228.8 (2.0)	234.2 (2.5)	232.4 (4.3)	235.1 (1.6)
25	260.6 (1.4)	252.5 (2.1)	259.6 (1.9)	260.3 (1.9)	263.6 (2.3)	264.6 (2.0)	265.8 (2.5)
50	290.8 (1.0)	285.4 (1.0)	290.1 (1.9)	292.2 (1.3)	295.9 (1.5)	297.3 (1.2)	298.1 (1.1)
75	320.1 (0.9)	315.3 (1.6)	319.4 (1.3)	322.7 (1.4)	326.6 (1.3)	326.3 (1.1)	327.1 (2.2)
90	346.2 (1.1)	341.5 (1.1)	344.5 (1.9)	348.3 (1.2)	350.3 (1.9)	350.0 (1.5)	351.7 (2.2)
95	361.5 (1.3)	357.3 (1.4)	359.9 (2.0)	362.9 (1.5)	363.8 (1.2)	363.4 (1.8)	365.1 (3.4)
MALE STUDENTS							
Mean	297.0 (1.2)	291.9 (1.4)	294.9 (1.9)	295.6 (1.3)	299.1 (1.7)	299.5 (2.0)	299.7 (1.6)
Standard Deviation	45.3 (0.6)	47.1 (0.9)	46.6 (1.2)	48.7 (0.9)	46.3 (1.0)	47.3 (1.2)	47.6 (1.1)
<i>Percentiles</i>							
5	219.5 (2.1)	210.3 (2.3)	213.9 (2.8)	210.4 (3.9)	219.0 (3.9)	214.2 (4.7)	215.0 (3.2)
10	238.2 (1.6)	228.9 (2.7)	231.4 (5.0)	229.5 (2.9)	235.5 (4.2)	235.4 (5.7)	233.9 (2.1)
25	267.6 (1.5)	261.1 (1.9)	263.5 (3.0)	263.4 (1.3)	267.4 (3.0)	269.4 (3.3)	268.8 (2.9)
50	298.5 (1.2)	294.3 (1.4)	298.7 (2.8)	297.9 (1.9)	301.3 (2.2)	303.6 (2.2)	303.7 (2.5)
75	328.1 (1.4)	324.8 (2.0)	327.6 (1.6)	329.9 (1.8)	333.6 (1.4)	334.0 (2.2)	333.1 (2.4)
90	353.9 (1.4)	350.6 (1.9)	353.4 (2.8)	356.7 (2.3)	357.2 (1.0)	357.1 (2.8)	358.6 (2.8)
95	368.8 (1.6)	365.3 (1.3)	367.0 (4.6)	372.5 (1.8)	370.4 (1.5)	370.2 (4.7)	373.3 (3.9)
FEMALE STUDENTS							
Mean	282.2 (1.1)	275.2 (1.3)	282.3 (1.5)	285.4 (1.6)	289.0 (1.5)	288.9 (1.7)	291.8 (1.4)
Standard Deviation	43.5 (0.5)	44.8 (0.8)	41.3 (1.1)	43.2 (1.0)	42.3 (1.2)	43.0 (1.3)	42.0 (1.1)
<i>Percentiles</i>							
5	207.5 (1.6)	198.3 (3.6)	209.8 (3.5)	209.2 (3.7)	216.5 (4.2)	211.5 (4.2)	220.0 (2.0)
10	226.1 (2.1)	215.5 (2.6)	228.1 (2.0)	228.2 (4.5)	232.9 (2.8)	230.9 (3.0)	236.3 (1.9)
25	254.5 (1.5)	245.7 (2.1)	256.2 (2.0)	257.7 (2.4)	260.3 (2.4)	261.1 (4.2)	263.5 (2.7)
50	283.8 (1.2)	277.6 (2.0)	283.7 (1.4)	287.7 (2.0)	290.9 (2.1)	292.5 (1.4)	293.5 (3.0)
75	311.5 (1.1)	306.2 (1.2)	310.8 (1.8)	316.2 (2.3)	319.8 (1.9)	318.6 (1.9)	321.8 (2.2)
90	336.3 (1.2)	330.1 (1.0)	333.5 (3.0)	339.6 (2.3)	341.4 (1.9)	341.3 (2.6)	344.4 (2.2)
95	351.2 (1.5)	345.2 (1.5)	348.3 (3.2)	351.5 (1.6)	354.4 (2.2)	355.0 (2.6)	357.2 (3.5)

The standard errors of the estimated scale scores appear in parentheses.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table A.18
(continued)

NAEP 1996 Long-Term Trend Science Results — Age 17
Scale Score Means, Standard Deviations, and Percentiles



	1977	1982	1986	1990	1992	1994	1996
WHITE STUDENTS							
Mean	297.7 (0.7)	293.1 (1.0)	297.5 (1.7)	300.9 (1.1)	304.2 (1.3)	306.0 (1.5)	306.8 (1.2)
Standard Deviation	40.5 (0.3)	41.6 (0.5)	40.6 (1.0)	41.1 (0.6)	40.6 (0.9)	39.8 (0.9)	40.4 (1.1)
<i>Percentiles</i>							
5	231.1 (0.9)	223.0 (1.7)	228.3 (2.9)	232.8 (2.3)	234.3 (3.9)	237.7 (4.4)	236.8 (1.5)
10	246.0 (0.7)	239.1 (1.5)	244.5 (3.1)	249.0 (2.0)	251.3 (2.5)	253.9 (3.1)	253.4 (2.2)
25	270.3 (0.8)	265.5 (1.5)	271.0 (2.0)	273.4 (1.5)	276.8 (2.2)	280.5 (1.7)	280.9 (1.5)
50	297.5 (0.7)	293.6 (1.0)	298.7 (1.7)	301.2 (1.2)	306.0 (1.5)	307.6 (1.6)	308.7 (1.3)
75	325.0 (0.9)	321.2 (1.6)	324.9 (1.3)	329.0 (1.6)	333.0 (1.7)	333.8 (1.4)	334.5 (1.8)
90	349.9 (1.0)	346.0 (1.3)	348.9 (3.0)	352.3 (1.3)	355.1 (1.5)	356.1 (2.0)	357.3 (2.6)
95	364.6 (1.4)	360.8 (1.3)	363.5 (2.8)	367.3 (2.0)	368.5 (0.9)	368.8 (4.8)	370.3 (3.4)
BLACK STUDENTS							
Mean	240.2 (1.5)	234.7 (1.7)	252.8 (2.9)	253.0 (4.5)	256.2 (3.2)	256.8 (3.1)	260.3 (2.4)
Standard Deviation	41.6 (0.9)	41.8 (1.3)	40.4 (2.2)	44.7 (2.4)	39.4 (1.4)	40.9 (1.7)	40.9 (1.6)
<i>Percentiles</i>							
5	172.4 (1.5)	166.0 (3.1)	189.3 (4.8)	182.0 (10.1)	191.8 (4.0)	186.2 (5.0)	191.3 (2.1)
10	187.3 (1.9)	180.6 (3.5)	201.6 (4.9)	196.6 (3.1)	206.6 (4.1)	201.9 (3.5)	207.8 (4.3)
25	212.1 (1.4)	206.4 (3.2)	225.0 (4.2)	220.5 (4.3)	230.1 (1.7)	229.1 (5.5)	231.6 (3.2)
50	240.4 (1.8)	234.7 (3.0)	251.9 (5.9)	251.6 (3.0)	255.4 (3.2)	257.9 (3.1)	259.3 (3.2)
75	267.9 (2.0)	262.7 (2.2)	279.5 (3.4)	282.9 (6.0)	282.4 (5.9)	285.1 (5.1)	288.9 (3.4)
90	293.4 (2.6)	288.8 (3.9)	306.0 (4.2)	313.6 (11.3)	308.2 (10.3)	310.4 (3.8)	314.9 (5.7)
95	309.6 (2.6)	305.4 (1.6)	322.8 (5.8)	329.3 (10.2)	324.8 (8.7)	322.1 (4.5)	327.5 (4.4)
HISPANIC STUDENTS							
Mean	262.3 (2.2)	248.7 (2.3)	259.3 (3.8)	261.5 (4.4)	270.2 (5.6)	261.4 (6.7)	269.3 (3.3)
Standard Deviation	41.8 (1.5)	43.4 (2.3)	39.3 (1.7)	44.1 (2.6)	41.6 (2.0)	46.3 (2.0)	43.6 (2.1)
<i>Percentiles</i>							
5	193.7 (5.2)	178.0 (6.1)	194.4 (9.3)	188.7 (6.2)	196.6 (10.5)	186.4 (6.9)	196.6 (6.0)
10	208.4 (4.0)	194.2 (7.2)	209.2 (3.8)	203.9 (11.1)	215.4 (14.6)	199.2 (5.7)	212.3 (8.5)
25	234.3 (3.9)	218.8 (3.3)	232.0 (5.6)	230.6 (3.6)	241.6 (8.6)	226.4 (7.7)	239.9 (6.5)
50	262.4 (2.4)	248.0 (2.5)	258.9 (5.8)	260.5 (5.7)	272.7 (11.0)	262.9 (12.0)	270.6 (3.8)
75	289.5 (5.1)	278.4 (3.4)	285.8 (3.6)	292.6 (10.6)	297.9 (2.8)	295.9 (5.7)	298.4 (7.4)
90	316.9 (4.4)	302.1 (3.4)	309.9 (7.6)	317.4 (5.1)	322.8 (6.7)	321.1 (5.8)	323.1 (2.8)
95	331.3 (4.4)	320.8 (11.0)	324.4 (6.3)	329.5 (9.1)	339.1 (6.0)	335.5 (4.8)	338.5 (4.9)

The standard errors of the estimated scale scores appear in parentheses.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Data Appendix B

Mathematics

Table B.1

NAEP 1996 Mathematics Long-Term Trend Assessment — Age 9
Percentages of students with mathematics scale scores at or above 150



	1978	1982	1986	1990	1992	1994	1996	*	‡	L	Q
TOTAL	96.7(0.3)	97.1(0.3)	97.9(0.3)	99.1(0.2)	99.0(0.2)	99.0(0.2)	99.1(0.2)	+		+	
Gender											
Male	96.2(0.5)	96.5(0.5)	98.0(0.5)	99.0(0.3)	99.0(0.3)	99.1(0.3)	99.1(0.2)	+		+	
Female	97.2(0.3)	97.6(0.3)	97.8(0.4)	99.1(0.3)	99.0(0.3)	98.9(0.3)	99.1(0.4)	+		+	
Race/Ethnicity											
White	98.3(0.2)	98.5(0.3)	98.8(0.2)	99.6(0.2)	99.6(0.1)	99.6(0.2)	99.6(0.1)	+		+	
Black	88.4(1.0)	90.2(1.0)	93.9(1.4)	96.9(0.9)	96.6(1.1)	97.4(1.0)	97.3(0.8)	+		+	
Hispanic	93.0(1.2)	94.3(1.2)	96.4(1.3)	98.0(0.8)	97.2(1.3)	97.2(1.2)	98.1(0.7)	+		+	
Other	98.1(****)	99.2(0.5)	97.4(****)	99.2(****)	99.8(****)	98.1(1.2)	98.7(****)				
Grade											
Below Modal Grade	89.4(0.8)	91.5(1.0)	94.1(0.8)	97.5(0.6)	97.3(0.6)	97.4(0.8)	97.8(0.5)	+		+	
At Modal Grade	99.3(0.2)	99.5(0.1)	99.8(0.1)	99.9(****)	99.9(****)	99.8(0.1)	99.7(0.1)				
Above Modal Grade	99.6(****)	99.8(****)	*****	*****	*****	*****	*****				
Region											
Northeast	97.9(0.4)	98.3(0.4)	98.4(0.5)	99.3(0.3)	99.5(0.2)	99.3(****)	99.6(0.2)	+			
Southeast	94.0(0.6)	94.6(0.8)	97.1(0.7)	98.2(0.7)	98.1(0.7)	99.0(0.4)	98.9(0.4)	+		+	
Central	98.2(0.3)	97.9(0.5)	98.5(0.5)	99.4(0.3)	99.4(0.3)	99.4(0.3)	99.0(0.4)			+	
West	96.2(0.6)	97.5(0.6)	97.5(0.9)	99.3(0.3)	98.8(0.5)	98.4(0.6)	98.9(0.4)	+		+	
Parents' Education Level											
Less Than H.S.	92.2(1.1)	90.9(1.6)	93.9(1.8)	97.9(1.2)	98.1(1.1)	97.2(1.8)	98.5(****)				
Graduated H.S.	97.1(0.4)	97.6(0.4)	97.4(0.5)	98.7(0.4)	98.2(0.6)	98.7(0.5)	98.3(0.6)			+	
Some Education After H.S.	98.5(0.6)	98.2(0.6)	98.9(****)	99.1(0.6)	99.5(0.3)	99.7(****)	99.5(0.3)			+	
Graduated College	98.8(0.3)	98.6(0.3)	99.0(0.3)	99.5(0.3)	99.3(0.3)	99.3(0.3)	99.6(0.3)			+	
Unknown	95.6(0.5)	96.3(0.5)	97.4(0.6)	99.0(0.3)	98.8(0.4)	98.9(0.4)	98.8(0.2)	+		+	
Type of School											
Public	96.4(0.3)	96.8(0.4)	97.7(0.3)	99.0(0.2)	98.8(0.3)	98.9(0.3)	99.0(0.2)	+		+	
Non-Public	99.0(****)	99.0(0.4)	98.7(0.8)	99.7(****)	99.8(0.1)	99.8(****)	99.6(****)				
Quartiles											
Upper	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
Middle two	99.9(0.1)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
Lower	86.9(0.9)	88.4(1.2)	91.6(1.1)	96.3(0.8)	95.9(0.9)	96.1(0.9)	96.3(0.7)	+		+	

Standard errors of the estimated percentages appear in parentheses. When no value appears (****), statistical tests involving this value should be interpreted with caution; standard error estimates may not be accurately determined and/or the sampling distribution of the statistic does not match statistical test assumptions (See Procedural Appendix).

* Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1978.

‡ Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1994.

L Indicates that the positive (+) or negative (-) linear trend is significant.

Q Indicates that the positive (+) or negative (-) quadratic trend is significant.

**** Data are unavailable for this assessment year.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table B.2

NAEP 1996 Mathematics Long-Term Trend Assessment — Age 9
Percentages of students with mathematics scale scores at or above 200



	1978	1982	1986	1990	1992	1994	1996	*	‡	L	Q
TOTAL	70.4(0.9)	71.4(1.2)	74.1(1.2)	81.5(1.0)	81.4(0.8)	82.0(0.7)	81.5(0.8)	+		+	
Gender											
Male	68.9(1.0)	68.8(1.3)	74.0(1.4)	80.6(1.0)	81.9(1.0)	82.3(0.9)	82.5(1.1)	+		+	
Female	72.0(1.1)	74.0(1.3)	74.3(1.3)	82.3(1.3)	80.9(1.1)	81.7(0.9)	80.7(0.9)	+		+	
Race/Ethnicity											
White	76.3(1.0)	76.8(1.2)	79.6(1.3)	86.9(0.9)	86.9(0.7)	87.0(0.8)	86.6(0.8)	+		+	
Black	42.0(1.4)	46.1(2.4)	53.4(2.5)	60.0(2.8)	59.8(2.8)	65.9(2.6)	65.3(2.4)	+		+	
Hispanic	54.2(2.8)	55.7(2.3)	57.6(2.9)	68.4(3.0)	65.0(2.9)	63.5(3.1)	67.1(2.1)	+		+	
Other	80.3(3.6)	85.2(3.4)	70.4(8.0)	87.0(5.4)	87.8(3.1)	79.6(3.9)	82.7(3.4)				
Grade											
Below Modal Grade	39.6(1.6)	41.7(2.3)	48.0(1.9)	60.3(1.9)	61.0(1.4)	64.0(1.6)	64.6(1.7)	+		+	
At Modal Grade	81.5(0.9)	84.4(0.9)	87.5(1.1)	92.8(0.9)	93.6(0.5)	91.0(0.8)	90.0(0.7)	+		+	-
Above Modal Grade	85.5(6.6)	93.4(3.4)	*****	*****	*****	*****	*****				
Region											
Northeast	78.7(2.3)	78.0(2.1)	77.9(3.2)	85.9(2.2)	85.5(1.8)	87.0(1.9)	85.4(1.7)			+	
Southeast	60.3(1.8)	62.5(2.3)	70.6(2.7)	75.1(2.8)	72.9(2.0)	80.7(1.0)	78.1(1.7)	+		+	
Central	75.9(1.7)	73.8(2.7)	77.6(2.5)	83.7(1.3)	85.3(1.4)	85.0(1.5)	83.9(1.9)	+		+	
West	65.6(1.7)	71.9(2.2)	70.5(2.9)	81.4(1.8)	81.6(2.1)	76.4(1.6)	79.5(1.4)	+		+	
Parents' Education Level											
Less Than H.S.	51.8(2.7)	51.0(2.6)	50.1(3.9)	63.4(4.7)	71.0(4.1)	62.1(4.5)	71.3(4.7)	+		+	
Graduated H.S.	71.7(1.4)	72.1(1.4)	72.2(2.1)	79.3(1.6)	75.5(1.9)	77.4(1.9)	74.2(2.4)			+	
Some Education After H.S.	80.7(2.0)	77.9(2.5)	80.7(2.7)	85.7(2.3)	87.2(2.0)	90.0(1.9)	88.0(2.0)			+	
Graduated College	82.1(1.3)	80.3(1.5)	82.6(1.2)	87.2(1.3)	86.5(1.0)	87.0(0.8)	87.5(1.2)	+		+	
Unknown	63.6(1.3)	64.9(2.2)	67.7(1.6)	77.1(1.4)	77.7(1.4)	77.5(1.2)	76.4(1.5)	+		+	
Type of School											
Public	68.8(0.9)	69.4(1.2)	72.7(1.4)	80.5(1.1)	79.7(0.9)	80.6(0.8)	80.7(0.8)	+		+	
Non-Public	83.3(1.9)	84.3(2.1)	81.8(2.3)	89.3(1.8)	92.2(1.2)	92.3(1.3)	87.1(1.5)		-	+	
Quartiles											
Upper	99.6(0.1)	99.7(****)	99.9(****)	100.0(****)	99.9(****)	100.0(****)	99.9(****)				
Middle two	82.2(0.6)	84.3(0.7)	89.5(0.9)	95.8(0.5)	95.7(0.4)	96.1(0.5)	95.5(0.6)	+		+	-
Lower	17.7(0.9)	17.5(1.6)	17.6(1.5)	34.3(2.2)	34.1(1.4)	35.7(1.3)	34.9(1.9)	+		+	

Standard errors of the estimated percentages appear in parentheses. When no value appears (****), statistical tests involving this value should be interpreted with caution; standard error estimates may not be accurately determined and/or the sampling distribution of the statistic does not match statistical test assumptions (See Procedural Appendix).

* Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1978.

‡ Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1994.

L Indicates that the positive (+) or negative (-) linear trend is significant.

Q Indicates that the positive (+) or negative (-) quadratic trend is significant.

**** Data are unavailable for this assessment year.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table B.3

NAEP 1996 Mathematics Long-Term Trend Assessment — Age 9
Percentages of students with mathematics scale scores at or above 250



	1978	1982	1986	1990	1992	1994	1996	*	‡	L	Q
TOTAL	19.6(0.7)	18.8(1.0)	20.7(0.9)	27.7(0.9)	27.8(0.9)	29.9(1.1)	29.7(1.0)	+		+	
Gender											
Male	19.2(0.6)	18.1(1.1)	20.9(1.1)	27.5(1.0)	29.4(1.2)	31.5(1.6)	32.7(1.7)	+		+	+
Female	19.9(1.0)	19.6(1.1)	20.6(1.3)	27.9(1.3)	26.3(1.5)	28.3(1.3)	26.7(1.1)	+		+	
Race/Ethnicity											
White	22.9(0.9)	21.8(1.1)	24.6(1.0)	32.7(1.0)	32.4(1.0)	35.3(1.3)	35.7(1.4)	+		+	
Black	4.1(0.6)	4.4(0.8)	5.6(0.9)	9.4(1.7)	9.6(1.4)	11.1(1.7)	10.0(1.2)	+		+	
Hispanic	9.2(2.5)	7.8(1.7)	7.3(2.8)	11.3(3.5)	11.7(2.5)	9.7(1.8)	13.8(2.3)				
Other	25.1(3.6)	38.3(4.7)	25.1(6.4)	31.7(3.6)	38.7(5.2)	31.2(5.5)	30.5(4.4)				
Grade											
Below Modal Grade	2.9(0.6)	3.2(0.4)	4.2(0.5)	6.9(0.6)	7.6(0.9)	9.8(1.1)	10.6(0.9)	+		+	+
At Modal Grade	25.4(0.9)	25.4(1.1)	29.1(1.1)	38.9(1.3)	39.9(1.1)	39.8(1.4)	39.2(1.4)	+		+	
Above Modal Grade	42.2(7.5)	62.4(16.3)	*****	*****	*****	*****	*****				
Region											
Northeast	25.9(1.6)	23.8(1.4)	24.8(2.7)	34.4(2.1)	32.4(2.1)	37.2(2.8)	35.6(2.6)	+		+	
Southeast	13.4(0.8)	13.6(1.7)	17.2(2.4)	24.0(2.0)	20.3(1.6)	27.3(2.4)	25.8(2.2)	+		+	
Central	23.2(1.4)	19.9(2.5)	24.7(1.8)	27.5(1.8)	31.4(1.9)	30.3(2.6)	31.6(2.7)	+		+	
West	14.9(1.1)	18.6(1.4)	16.3(2.2)	25.6(1.6)	27.1(2.5)	26.0(1.2)	26.9(1.6)	+		+	
Parents' Education Level											
Less Than H.S.	7.5(1.2)	7.1(1.5)	6.4(2.3)	9.9(2.6)	15.0(2.2)	9.5(2.7)	18.3(3.5)	+		+	
Graduated H.S.	18.8(1.1)	16.4(1.3)	17.4(2.1)	23.6(1.6)	20.5(2.1)	24.0(1.8)	20.4(2.8)				
Some Education After H.S.	29.2(1.9)	23.7(2.9)	26.6(2.6)	35.0(4.2)	36.9(2.4)	36.9(3.8)	37.5(4.2)			+	
Graduated College	30.4(1.3)	27.2(1.3)	29.6(1.4)	36.6(1.7)	34.8(1.4)	37.3(1.4)	39.5(2.1)	+		+	
Unknown	13.4(1.1)	13.6(1.3)	13.3(1.1)	19.7(1.1)	21.7(1.3)	22.5(1.6)	20.4(1.0)	+		+	
Type of School											
Public	18.5(0.7)	17.3(0.9)	19.1(1.1)	26.8(1.0)	26.1(0.9)	27.9(1.2)	28.3(1.1)	+		+	
Non-Public	28.4(2.0)	28.6(2.6)	28.9(2.7)	35.2(3.3)	38.6(2.7)	44.4(4.0)	38.7(3.0)	+		+	
Quartiles											
Upper	59.7(1.4)	60.0(1.6)	67.9(1.4)	79.8(1.3)	79.9(1.3)	83.0(2.1)	82.6(2.2)	+		+	
Middle two	9.3(0.6)	7.7(0.7)	7.5(0.7)	15.5(0.8)	15.6(1.0)	18.1(1.3)	18.0(1.0)	+		+	+
Lower	0.1(****)	0.0(****)	0.0(****)	0.1(****)	0.1(****)	0.1(****)	0.1(****)				

Standard errors of the estimated percentages appear in parentheses. When no value appears (****), statistical tests involving this value should be interpreted with caution; standard error estimates may not be accurately determined and/or the sampling distribution of the statistic does not match statistical test assumptions (See Procedural Appendix).

* Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1978.

‡ Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1994.

L Indicates that the positive (+) or negative (-) linear trend is significant.

Q Indicates that the positive (+) or negative (-) quadratic trend is significant.

**** Data are unavailable for this assessment year.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table B.4

NAEP 1996 Mathematics Long-Term Trend Assessment — Age 9
Percentages of students with mathematics scale scores at or above 300



	1978	1982	1986	1990	1992	1994	1996	*	‡	L	Q
TOTAL	0.8(0.1)	0.6(0.1)	0.6(0.2)	1.2(0.3)	1.2(0.3)	1.3(0.4)	1.6(0.3)	+		+	
Gender											
Male	0.7(0.2)	0.6(0.1)	0.7(0.3)	1.3(0.4)	1.4(0.3)	1.4(0.4)	2.0(0.5)	+		+	
Female	0.8(0.2)	0.5(0.1)	0.6(0.3)	1.0(0.3)	1.0(0.4)	1.1(0.4)	1.2(0.4)				
Race/Ethnicity											
White	0.9(0.2)	0.6(0.1)	0.8(0.3)	1.5(0.4)	1.4(0.3)	1.5(0.4)	2.0(0.4)	+		+	
Black	0.0(****)	0.0(****)	0.1(****)	0.1(****)	0.1(****)	0.0(****)	0.1(****)				
Hispanic	0.2(****)	0.0(****)	0.1(****)	0.2(****)	0.1(****)	0.0(****)	0.2(****)				
Other	1.9(0.9)	3.7(2.1)	0.8(****)	2.0(1.0)	4.0(1.7)	2.3(1.5)	1.7(1.2)				
Grade											
Below Modal Grade	0.0(****)	0.0(****)	0.0(****)	0.1(****)	0.0(****)	0.0(****)	0.2(****)				
At Modal Grade	1.0(0.2)	0.7(0.1)	0.9(0.3)	1.8(0.4)	1.9(0.4)	1.8(0.5)	2.2(0.4)	+		+	
Above Modal Grade	4.9(****)	9.4(6.5)	*****	*****	*****	*****	*****				
Region											
Northeast	1.3(0.5)	0.9(0.3)	1.0(0.4)	2.1(0.7)	1.7(0.7)	2.3(1.0)	2.4(0.9)				
Southeast	0.3(0.2)	0.3(0.1)	0.3(0.2)	1.2(0.6)	0.7(0.2)	0.9(0.5)	1.5(0.6)				
Central	1.1(0.3)	0.6(0.3)	1.0(0.7)	0.6(0.2)	1.4(0.6)	1.1(0.3)	1.4(0.7)				
West	0.4(0.2)	0.6(0.1)	0.2(****)	0.9(0.4)	1.0(0.5)	0.9(0.4)	1.2(0.4)				
Parents' Education Level											
Less Than H.S.	0.1(****)	0.0(****)	0.0(****)	0.0(****)	0.1(****)	0.0(****)	0.5(****)				
Graduated H.S.	0.6(0.2)	0.4(0.2)	0.4(****)	0.4(****)	0.4(****)	0.7(0.4)	0.3(****)				
Some Education After H.S.	1.6(0.6)	0.5(****)	1.2(****)	1.4(0.8)	2.0(0.8)	2.2(1.5)	2.0(0.8)				
Graduated College	1.6(0.5)	1.0(0.3)	1.2(0.5)	2.1(0.5)	1.8(0.5)	1.9(0.6)	2.7(0.6)				
Unknown	0.3(0.1)	0.4(0.2)	0.2(****)	0.5(0.3)	0.7(0.2)	0.5(0.3)	0.6(0.4)				
Type of School											
Public	0.7(0.2)	0.5(0.1)	0.6(0.2)	1.1(0.3)	1.1(0.3)	1.1(0.4)	1.5(0.3)				+
Non-Public	1.2(0.4)	1.0(0.6)	1.1(0.6)	1.8(1.2)	1.9(0.7)	2.2(0.8)	2.1(1.1)				
Quartiles											
Upper	3.0(0.5)	2.2(0.3)	2.6(0.8)	4.6(1.1)	4.7(1.0)	5.0(1.4)	6.3(1.3)	+		+	
Middle two	0.0(****)	0.0(****)	0.0(****)	0.1(****)	0.1(0.0)	0.0(****)	0.0(****)				
Lower	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)				

Standard errors of the estimated percentages appear in parentheses. When no value appears (****), statistical tests involving this value should be interpreted with caution; standard error estimates may not be accurately determined and/or the sampling distribution of the statistic does not match statistical test assumptions (See Procedural Appendix).

* Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1978.

‡ Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1994.

L Indicates that the positive (+) or negative (-) linear trend is significant.

Q Indicates that the positive (+) or negative (-) quadratic trend is significant.

***** Data are unavailable for this assessment year.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table B.5

NAEP 1996 Mathematics Long-Term Trend Assessment — Age 9
Percentages of students with mathematics scale scores at or above 350



	1978	1982	1986	1990	1992	1994	1996	*	‡	L	Q
TOTAL	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)				
Gender											
Male	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)				
Female	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)				
Race/Ethnicity											
White	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)				
Black	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)				
Hispanic	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)				
Other	0.0(****)	0.1(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.1(****)				
Grade											
Below Modal Grade	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)				
At Modal Grade	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)				
Above Modal Grade	0.0(****)	0.5(****)	*****	*****	*****	*****	*****				
Region											
Northeast	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)				
Southeast	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)				
Central	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)				
West	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)				
Parents' Education Level											
Less Than H.S.	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)				
Graduated H.S.	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)				
Some Education After H.S.	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)				
Graduated College	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)				
Unknown	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)				
Type of School											
Public	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)				
Non-Public	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.1(****)	0.0(****)				
Quartiles											
Upper	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)				
Middle two	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)				
Lower	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)				

Standard errors of the estimated percentages appear in parentheses. When no value appears (****), statistical tests involving this value should be interpreted with caution; standard error estimates may not be accurately determined and/or the sampling distribution of the statistic does not match statistical test assumptions (See Procedural Appendix).

* Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1978.

‡ Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1994.

L Indicates that the positive (+) or negative (-) linear trend is significant.

Q Indicates that the positive (+) or negative (-) quadratic trend is significant.

***** Data are unavailable for this assessment year.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table B.6

NAEP 1996 Mathematics Long-Term Trend Assessment — Age 13
Percentages of students with mathematics scale scores at or above 150



	1978	1982	1986	1990	1992	1994	1996	*	‡	L	Q
TOTAL	99.8(0.1)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
Gender											
Male	99.7(0.1)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	99.9(****)	100.0(****)				
Female	99.8(0.1)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
Race/Ethnicity											
White	100.0(0.0)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
Black	98.6(0.4)	99.8(****)	100.0(****)	100.0(****)	99.9(****)	99.9(****)	100.0(****)				
Hispanic	99.6(****)	99.9(****)	100.0(****)	99.9(****)	100.0(****)	100.0(****)	99.9(****)				
Other	99.8(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	99.9(****)	100.0(****)				
Grade											
Below Modal Grade	99.2(0.2)	99.9(****)	100.0(****)	100.0(****)	100.0(****)	99.9(****)	100.0(****)				
At Modal Grade	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
Above Modal Grade	100.0(****)	100.0(****)	*****	*****	*****	*****	*****				
Region											
Northeast	99.9(0.1)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
Southeast	99.4(0.2)	99.9(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
Central	99.9(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
West	99.8(0.1)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	99.9(****)	100.0(****)				
Parents' Education Level											
Less Than H.S.	99.5(0.2)	99.9(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	99.9(****)				
Graduated H.S.	99.9(0.1)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
Some Education After H.S.	99.9(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
Graduated College	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
Unknown	99.1(0.3)	99.9(****)	100.0(****)	100.0(****)	100.0(****)	99.9(****)	100.0(****)				
Type of School											
Public	99.7(0.1)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
Non-Public	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	99.9(****)	100.0(****)				
Quartiles											
Upper	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
Middle two	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
Lower	99.0(0.3)	99.9(****)	100.0(****)	100.0(****)	100.0(****)	99.9(****)	99.9(****)				

Standard errors of the estimated percentages appear in parentheses. When no value appears (****), statistical tests involving this value should be interpreted with caution; standard error estimates may not be accurately determined and/or the sampling distribution of the statistic does not match statistical test assumptions (See Procedural Appendix).

* Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1978.

‡ Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1994.

L Indicates that the positive (+) or negative (-) linear trend is significant.

Q Indicates that the positive (+) or negative (-) quadratic trend is significant.

***** Data are unavailable for this assessment year.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table B.7

NAEP 1996 Mathematics Long-Term Trend Assessment — Age 13
Percentages of students with mathematics scale scores at or above 200



		1978	1982	1986	1990	1992	1994	1996	*	‡	L	Q
TOTAL		94.6(0.5)	97.7(0.4)	98.6(0.2)	98.5(0.2)	98.7(0.3)	98.5(0.3)	98.8(0.2)	+	+	-	
Gender												
	Male	93.9(0.5)	97.5(0.6)	98.5(0.3)	98.2(0.3)	98.8(0.4)	98.3(0.4)	98.7(0.3)	+	+	-	
	Female	95.2(0.5)	98.0(0.3)	98.6(0.3)	98.9(0.2)	98.6(0.2)	98.7(0.3)	98.8(0.3)	+	+	-	
Race/Ethnicity												
	White	97.6(0.3)	99.1(0.1)	99.3(0.3)	99.4(0.1)	99.6(0.2)	99.3(0.2)	99.6(0.2)	+	+	-	
	Black	79.7(1.5)	90.2(1.6)	95.4(0.9)	95.4(1.1)	95.0(1.4)	95.6(1.6)	96.2(1.3)	+	+	-	
	Hispanic	86.4(0.9)	95.9(0.9)	96.9(1.4)	96.8(1.1)	98.1(0.7)	97.1(1.3)	96.2(0.8)	+	+	-	
	Other	97.3(1.5)	99.1(0.6)	99.6(****)	98.3(1.0)	99.0(****)	99.3(****)	98.7(****)				
Grade												
	Below Modal Grade	86.2(1.1)	93.6(1.0)	96.4(0.6)	96.3(0.5)	97.1(0.6)	96.7(0.7)	97.5(0.5)	+	+	-	
	At Modal Grade	97.9(0.3)	99.4(0.2)	99.6(0.1)	99.8(0.1)	99.7(0.1)	99.6(0.2)	99.4(0.2)	+	+	-	
	Above Modal Grade	99.2(****)	100.0(****)	****	****	****	****	****				
Region												
	Northeast	96.5(0.9)	99.0(0.3)	99.2(0.2)	99.1(0.6)	98.6(0.7)	99.5(0.3)	98.9(0.5)				
	Southeast	90.1(1.6)	95.6(1.0)	98.3(0.6)	97.8(0.6)	98.0(0.7)	98.2(0.5)	98.4(0.7)	+	+	-	
	Central	96.8(0.4)	98.6(0.5)	98.4(1.0)	99.0(0.3)	99.3(0.4)	98.7(0.9)	99.2(0.3)	+	+	-	
	West	94.0(0.9)	97.6(0.9)	98.3(0.5)	98.3(0.5)	98.8(0.4)	98.0(0.5)	98.6(0.4)	+	+	-	
Parents' Education Level												
	Less Than H.S.	89.2(1.1)	95.3(1.2)	96.5(1.6)	96.4(1.3)	98.0(0.9)	96.9(1.6)	96.4(1.4)	+	+	-	
	Graduated H.S.	96.0(0.4)	98.0(0.4)	98.8(0.5)	98.5(0.5)	98.3(0.7)	98.2(0.5)	98.5(0.5)	+	+	-	
	Some Education After H.S.	97.6(0.6)	98.6(0.3)	99.3(0.4)	99.7(****)	99.6(0.2)	99.3(0.4)	99.4(****)				
	Graduated College	98.8(0.2)	98.9(0.4)	99.2(0.3)	99.3(0.2)	99.3(0.2)	99.6(0.2)	99.2(0.2)				
	Unknown	85.5(1.3)	94.1(1.6)	95.2(1.7)	94.2(1.6)	95.4(1.4)	94.9(1.6)	97.7(0.8)	+	+	-	
Type of School												
	Public	94.1(0.5)	97.5(0.4)	98.5(0.3)	98.4(0.2)	98.5(0.3)	98.5(0.3)	98.6(0.2)	+	+	-	
	Non-Public	99.0(0.4)	99.5(0.3)	98.9(0.6)	99.7(****)	99.9(****)	98.7(****)	99.6(****)				
Quartiles												
	Upper	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
	Middle two	99.6(0.1)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
	Lower	79.0(1.2)	91.0(1.2)	94.2(0.8)	94.1(0.8)	94.9(1.0)	94.0(1.2)	95.0(0.8)	+	+	-	

Standard errors of the estimated percentages appear in parentheses. When no value appears (****), statistical tests involving this value should be interpreted with caution; standard error estimates may not be accurately determined and/or the sampling distribution of the statistic does not match statistical test assumptions (See Procedural Appendix).

* Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1978.

‡ Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1994.

L Indicates that the positive (+) or negative (-) linear trend is significant.

Q Indicates that the positive (+) or negative (-) quadratic trend is significant.

**** Data are unavailable for this assessment year.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table B.8

NAEP 1996 Mathematics Long-Term Trend Assessment — Age 13
Percentages of students with mathematics scale scores at or above 250



	1978	1982	1986	1990	1992	1994	1996	*	‡	L	Q
TOTAL	64.9(1.2)	71.4(1.2)	73.3(1.6)	74.7(1.0)	77.9(1.1)	78.1(1.1)	78.6(0.9)	+		+	
Gender											
Male	63.9(1.3)	71.3(1.4)	73.8(1.8)	75.1(1.8)	78.1(1.6)	78.9(1.5)	79.8(1.4)	+		+	
Female	65.9(1.2)	71.4(1.3)	72.7(1.9)	74.4(1.3)	77.7(1.1)	77.3(1.0)	77.4(1.1)	+		+	
Race/Ethnicity											
White	72.9(0.9)	78.3(0.9)	78.9(1.7)	82.0(1.0)	84.9(1.1)	85.5(0.9)	86.4(1.0)	+		+	
Black	28.7(2.1)	37.9(2.5)	49.0(3.7)	48.7(3.6)	51.0(2.7)	51.0(3.9)	53.7(2.6)	+		+	
Hispanic	36.0(2.9)	52.2(2.5)	56.0(5.0)	56.7(3.3)	63.3(2.7)	59.2(2.2)	58.3(2.3)	+		+	-
Other	68.6(4.3)	75.3(5.9)	85.7(4.7)	76.5(5.0)	82.9(3.2)	84.8(3.0)	81.1(3.5)				
Grade											
Below Modal Grade	39.2(1.6)	46.0(2.0)	51.3(2.1)	54.2(1.7)	61.6(2.1)	63.1(1.7)	66.7(1.9)	+		+	
At Modal Grade	75.2(1.1)	81.2(1.0)	83.9(1.3)	86.5(0.9)	87.6(0.8)	86.9(0.9)	85.1(0.9)	+		+	-
Above Modal Grade	88.7(5.1)	92.3(4.7)	*****	*****	*****	*****	*****				
Region											
Northeast	73.4(2.4)	79.4(1.5)	80.5(2.2)	78.2(2.3)	78.4(2.5)	86.7(1.4)	79.5(3.1)				
Southeast	53.5(3.6)	60.3(2.0)	68.6(2.3)	70.1(2.4)	74.8(2.7)	73.9(3.1)	75.3(2.1)	+		+	
Central	70.4(1.9)	75.9(2.4)	70.7(6.3)	77.9(2.8)	80.6(1.8)	78.9(3.4)	85.0(1.9)	+		+	
West	60.5(2.4)	69.0(3.0)	73.9(2.2)	72.9(1.8)	77.7(2.0)	74.7(1.8)	75.7(1.7)	+		+	-
Parents' Education Level											
Less Than H.S.	44.6(1.7)	51.2(2.3)	54.7(3.9)	55.8(2.6)	59.7(2.3)	57.2(4.4)	56.1(4.4)				+
Graduated H.S.	64.9(1.2)	66.7(1.0)	68.7(1.5)	68.2(1.9)	67.9(2.4)	71.6(1.6)	73.8(1.7)	+		+	
Some Education After H.S.	75.5(1.5)	80.5(1.3)	80.7(1.9)	84.6(1.5)	85.8(1.3)	82.2(1.7)	83.6(1.5)	+		+	
Graduated College	83.4(1.1)	84.2(1.5)	83.5(1.6)	84.1(1.1)	87.0(1.0)	87.6(1.1)	85.5(1.1)				
Unknown	39.3(1.5)	52.7(3.9)	45.2(4.4)	46.3(3.6)	54.7(3.0)	53.9(3.6)	62.6(3.2)	+		+	
Type of School											
Public	63.3(1.2)	69.7(1.3)	72.9(1.7)	73.3(1.2)	76.3(1.2)	76.7(1.2)	77.2(0.9)	+		+	
Non-Public	80.8(1.7)	85.1(1.6)	81.9(3.3)	87.0(2.0)	89.7(2.1)	88.5(2.6)	89.3(3.5)			+	
Quartiles											
Upper	98.8(0.3)	99.8(0.1)	100.0(****)	99.9(****)	100.0(****)	100.0(****)	99.9(****)				
Middle two	74.0(0.6)	83.9(0.8)	88.2(1.1)	89.6(0.8)	93.1(0.9)	93.5(0.7)	93.6(1.0)	+		+	-
Lower	12.9(0.6)	17.8(0.9)	16.7(1.5)	19.7(1.7)	25.5(2.2)	25.3(1.7)	27.0(1.2)	+		+	

Standard errors of the estimated percentages appear in parentheses. When no value appears (****), statistical tests involving this value should be interpreted with caution; standard error estimates may not be accurately determined and/or the sampling distribution of the statistic does not match statistical test assumptions (See Procedural Appendix).

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‡ Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1994.

L Indicates that the positive (+) or negative (-) linear trend is significant.

Q Indicates that the positive (+) or negative (-) quadratic trend is significant.

***** Data are unavailable for this assessment year.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table B.9

NAEP 1996 Mathematics Long-Term Trend Assessment — Age 13
Percentages of students with mathematics scale scores at or above 300



	1978	1982	1986	1990	1992	1994	1996	*	‡	L	Q	
TOTAL	18.0(0.7)	17.4(0.9)	15.8(1.0)	17.3(1.0)	18.9(1.0)	21.3(1.4)	20.6(1.2)				+	+
Gender												
Male	18.4(0.9)	18.9(1.2)	17.6(1.1)	19.0(1.2)	20.7(1.1)	23.9(1.6)	23.0(1.6)	+			+	
Female	17.5(0.7)	15.9(1.0)	14.1(1.3)	15.7(1.0)	17.2(1.4)	18.7(1.4)	18.4(1.5)					+
Race/Ethnicity												
White	21.4(0.7)	20.5(1.0)	18.6(1.2)	21.0(1.2)	22.8(1.3)	25.6(1.6)	25.4(1.5)				+	+
Black	2.3(0.5)	2.9(1.0)	4.0(1.4)	3.9(1.6)	4.0(0.7)	6.4(2.4)	4.8(1.1)					
Hispanic	4.0(1.0)	6.3(1.0)	5.5(1.1)	6.4(1.7)	7.0(1.2)	6.4(1.8)	6.7(1.2)					
Other	27.4(4.8)	24.2(3.9)	28.1(6.2)	22.2(8.3)	30.1(4.7)	32.4(4.5)	28.8(5.6)					
Grade												
Below Modal Grade	4.5(0.5)	4.3(0.7)	4.0(0.7)	4.5(0.6)	7.3(1.0)	8.6(1.1)	10.9(1.3)	+			+	+
At Modal Grade	23.2(0.9)	21.9(0.9)	21.4(1.1)	24.6(1.3)	25.6(1.4)	28.5(1.6)	25.6(1.5)				+	
Above Modal Grade	47.9(9.2)	60.6(7.2)	*****	*****	*****	*****	*****					
Region												
Northeast	24.2(1.9)	23.9(2.1)	22.5(2.4)	21.3(2.4)	19.7(2.4)	30.3(2.6)	21.1(2.7)					
Southeast	11.6(1.5)	10.2(1.3)	10.0(1.3)	13.7(1.4)	18.2(2.7)	15.3(1.7)	16.1(2.3)				+	
Central	20.4(1.3)	20.1(1.8)	12.8(2.6)	17.4(2.4)	20.6(1.7)	21.2(3.3)	26.0(1.9)					+
West	14.8(1.2)	15.1(1.8)	18.3(2.3)	16.9(1.8)	17.3(1.4)	19.7(1.8)	19.9(3.1)					
Parents' Education Level												
Less Than H.S.	5.8(0.6)	5.6(0.7)	4.5(1.3)	4.7(1.4)	4.4(1.6)	5.8(1.4)	5.8(2.0)					
Graduated H.S.	14.8(0.7)	10.8(0.7)	8.0(0.9)	8.7(0.9)	9.6(1.2)	11.3(1.1)	11.6(1.2)					+
Some Education After H.S.	22.2(1.3)	20.4(1.2)	16.9(2.2)	19.8(1.8)	19.3(1.6)	22.2(2.1)	21.1(1.9)					+
Graduated College	32.6(1.5)	30.0(1.6)	26.0(1.4)	26.9(1.5)	28.2(1.5)	31.1(2.1)	29.8(2.0)					+
Unknown	5.4(0.9)	7.2(1.9)	4.3(1.9)	4.2(1.3)	6.1(1.6)	5.8(1.3)	7.2(1.4)					
Type of School												
Public	17.0(0.8)	16.4(1.0)	15.6(1.0)	16.7(1.1)	18.0(1.0)	20.0(1.4)	19.2(1.3)				+	
Non-Public	26.9(1.8)	26.3(3.1)	22.0(6.8)	23.2(2.5)	25.9(3.7)	30.7(3.7)	31.6(4.8)					
Quartiles												
Upper	56.9(0.9)	59.1(1.5)	59.6(1.9)	63.2(1.6)	67.4(1.6)	73.5(2.6)	71.1(2.4)	+			+	
Middle two	7.4(0.4)	5.3(0.4)	1.9(0.6)	3.1(0.5)	4.2(0.6)	5.8(0.9)	5.6(0.5)	-				+
Lower	0.1(0.0)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)					

Standard errors of the estimated percentages appear in parentheses. When no value appears (****), statistical tests involving this value should be interpreted with caution; standard error estimates may not be accurately determined and/or the sampling distribution of the statistic does not match statistical test assumptions (See Procedural Appendix).

* Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1978.

‡ Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1994.

L Indicates that the positive (+) or negative (-) linear trend is significant.

Q Indicates that the positive (+) or negative (-) quadratic trend is significant.

**** Data are unavailable for this assessment year.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table B.10

NAEP 1996 Mathematics Long-Term Trend Assessment — Age 13
Percentages of students with mathematics scale scores at or above 350



		1978	1982	1986	1990	1992	1994	1996	*	‡	L	Q
TOTAL		1.0(0.2)	0.5(0.1)	0.4(0.1)	0.4(0.1)	0.4(0.2)	0.6(0.2)	0.6(0.1)				+
Gender												
	Male	1.1(0.2)	0.7(0.2)	0.5(0.2)	0.5(0.2)	0.5(0.2)	0.8(0.3)	0.8(0.2)				+
	Female	0.9(0.2)	0.4(0.2)	0.3(0.1)	0.2(0.1)	0.3(****)	0.5(0.3)	0.5(0.2)				
Race/Ethnicity												
	White	1.2(0.2)	0.6(0.1)	0.4(0.1)	0.4(0.2)	0.4(0.2)	0.7(0.3)	0.8(0.2)				+
	Black	0.0(****)	0.0(****)	0.1(****)	0.1(****)	0.1(****)	0.3(****)	0.1(****)				
	Hispanic	0.1(****)	0.0(****)	0.2(****)	0.1(****)	0.0(****)	0.0(****)	0.0(****)				
	Other	3.7(2.1)	1.0(0.5)	1.4(****)	0.5(****)	1.2(****)	1.8(1.0)	1.8(****)				
Grade												
	Below Modal Grade	0.1(****)	0.0(****)	0.0(****)	0.0(****)	0.1(****)	0.1(****)	0.1(****)				
	At Modal Grade	1.3(0.2)	0.6(0.1)	0.5(0.2)	0.5(0.2)	0.5(0.1)	0.8(0.3)	0.7(0.2)				+
	Above Modal Grade	9.0(4.6)	7.7(4.2)	*****	*****	*****	*****	*****				
Region												
	Northeast	1.3(0.5)	1.0(0.4)	0.7(0.3)	0.7(0.4)	0.4(****)	1.4(0.6)	0.7(0.3)				
	Southeast	0.5(0.2)	0.1(****)	0.2(****)	0.1(****)	0.5(****)	0.2(****)	0.3(0.1)				
	Central	1.2(0.3)	0.6(0.2)	0.3(****)	0.3(0.2)	0.3(0.2)	0.7(****)	0.8(0.2)				
	West	0.8(0.3)	0.3(0.1)	0.4(****)	0.3(0.2)	0.3(0.1)	0.4(0.2)	0.7(0.4)				
Parents' Education Level												
	Less Than H.S.	0.1(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)				
	Graduated H.S.	0.5(0.1)	0.1(0.1)	0.1(****)	0.0(****)	0.1(****)	0.1(****)	0.3(****)				
	Some Education After H.S.	1.1(0.2)	0.5(0.2)	0.5(****)	0.4(0.3)	0.2(0.2)	1.0(0.6)	0.4(****)				
	Graduated College	2.6(0.6)	1.2(0.4)	0.7(0.3)	0.7(0.3)	0.7(0.4)	1.0(0.4)	1.0(0.3)			-	+
	Unknown	0.1(****)	0.0(****)	0.0(****)	0.1(****)	0.0(****)	0.1(****)	0.1(****)				
Type of School												
	Public	0.9(0.2)	0.5(0.1)	0.4(0.1)	0.3(0.1)	0.3(0.2)	0.6(0.2)	0.6(0.1)				+
	Non-Public	1.4(0.4)	1.0(0.3)	0.1(****)	0.7(0.4)	0.7(0.4)	1.0(****)	1.0(0.6)				
Quartiles												
	Upper	3.9(0.6)	2.1(0.4)	1.5(0.5)	1.4(0.5)	1.5(0.6)	2.5(0.9)	2.5(0.6)				+
	Middle two	0.0(0.0)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)				
	Lower	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)				

Standard errors of the estimated percentages appear in parentheses. When no value appears (****), statistical tests involving this value should be interpreted with caution; standard error estimates may not be accurately determined and/or the sampling distribution of the statistic does not match statistical test assumptions (See Procedural Appendix).

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L Indicates that the positive (+) or negative (-) linear trend is significant.

Q Indicates that the positive (+) or negative (-) quadratic trend is significant.

***** Data are unavailable for this assessment year.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table B.11

NAEP 1996 Mathematics Long-Term Trend Assessment — Age 17
Percentages of students with mathematics scale scores at or above 150



		1978	1982	1986	1990	1992	1994	1996	*	‡	L	Q
TOTAL		100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
Gender												
	Male	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
	Female	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
Race/Ethnicity												
	White	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
	Black	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
	Hispanic	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
	Other	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
Grade												
	Below Modal Grade	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
	At Modal Grade	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
	Above Modal Grade	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
Region												
	Northeast	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
	Southeast	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
	Central	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
	West	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
Parents' Education Level												
	Less Than H.S.	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
	Graduated H.S.	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
	Some Education After H.S.	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
	Graduated College	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
	Unknown	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
Type of School												
	Public	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
	Non-Public	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
Quartiles												
	Upper	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
	Middle two	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
	Lower	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				

Standard errors of the estimated percentages appear in parentheses. When no value appears (****), statistical tests involving this value should be interpreted with caution; standard error estimates may not be accurately determined and/or the sampling distribution of the statistic does not match statistical test assumptions (See Procedural Appendix).

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**** Data are unavailable for this assessment year.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table B.12

NAEP 1996 Mathematics Long-Term Trend Assessment — Age 17
Percentages of students with mathematics scale scores at or above 200



		1978	1982	1986	1990	1992	1994	1996	*	‡	L	Q
TOTAL		99.8(0.1)	99.9(0.0)	99.9(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
Gender												
	Male	99.9(0.1)	100.0(****)	99.9(****)	99.9(****)	100.0(****)	100.0(****)	100.0(****)				
	Female	99.7(0.1)	99.9(0.0)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
Race/Ethnicity												
	White	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
	Black	98.8(0.3)	99.7(0.2)	100.0(****)	99.9(****)	100.0(****)	100.0(****)	100.0(****)				
	Hispanic	99.3(0.4)	99.8(****)	99.4(****)	99.6(****)	100.0(****)	100.0(****)	99.9(****)				
	Other	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
Grade												
	Below Modal Grade	99.1(0.3)	99.7(0.2)	99.8(****)	99.9(****)	100.0(****)	100.0(****)	100.0(****)				
	At Modal Grade	99.9(0.0)	100.0(0.0)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
	Above Modal Grade	99.9(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
Region												
	Northeast	99.9(0.1)	99.9(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
	Southeast	99.6(0.2)	99.9(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
	Central	99.9(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
	West	99.8(0.1)	99.9(****)	99.8(****)	99.9(****)	100.0(****)	100.0(****)	100.0(****)				
Parents' Education Level												
	Less Than H.S.	99.5(0.3)	99.8(0.1)	100.0(****)	99.9(****)	100.0(****)	100.0(****)	99.8(****)				
	Graduated H.S.	99.8(****)	99.9(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
	Some Education After H.S.	99.9(0.0)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
	Graduated College	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
	Unknown	99.1(0.4)	99.5(****)	100.0(****)	99.3(****)	100.0(****)	100.0(****)	100.0(****)				
Type of School												
	Public	99.8(0.1)	99.9(0.0)	99.9(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
	Non-Public	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
Quartiles												
	Upper	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
	Middle two	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
	Lower	99.3(0.2)	99.7(0.1)	99.8(****)	99.8(****)	100.0(****)	100.0(****)	99.9(****)				

Standard errors of the estimated percentages appear in parentheses. When no value appears (****), statistical tests involving this value should be interpreted with caution; standard error estimates may not be accurately determined and/or the sampling distribution of the statistic does not match statistical test assumptions (See Procedural Appendix).

* Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1978.

‡ Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1994.

L Indicates that the positive (+) or negative (-) linear trend is significant.

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**** Data are unavailable for this assessment year.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table B.13

NAEP 1996 Mathematics Long-Term Trend Assessment — Age 17
Percentages of students with mathematics scale scores at or above 250



	1978	1982	1986	1990	1992	1994	1996	*	‡	L	Q
TOTAL	92.0(0.5)	93.0(0.5)	95.6(0.5)	96.0(0.5)	96.6(0.5)	96.5(0.5)	96.8(0.4)	+	+	-	
Gender											
Male	93.0(0.5)	93.9(0.6)	96.1(0.6)	95.8(0.8)	96.9(0.6)	97.3(0.6)	97.0(0.7)	+	+		
Female	91.0(0.6)	92.1(0.6)	95.1(0.7)	96.2(0.8)	96.3(0.8)	96.0(0.6)	96.7(0.6)	+	+		
Race/Ethnicity											
White	95.6(0.3)	96.2(0.3)	98.0(0.4)	97.6(0.3)	98.3(0.4)	98.4(0.4)	98.7(0.4)	+	+		
Black	70.7(1.7)	76.4(1.5)	85.6(2.5)	92.4(2.2)	89.6(2.5)	90.6(1.8)	90.6(1.3)	+	+	-	
Hispanic	78.3(2.3)	81.4(1.9)	89.3(2.5)	85.8(4.2)	94.1(2.2)	91.8(3.6)	92.2(2.2)	+	+		
Other	94.5(2.6)	97.2(1.7)	91.9(2.7)	97.9(****)	96.5(1.7)	97.0(****)	97.4(1.2)				
Grade											
Below Modal Grade	75.5(1.3)	79.0(1.9)	84.2(2.3)	88.2(1.8)	90.0(1.7)	89.1(2.0)	91.6(1.3)	+	+		
At Modal Grade	94.8(0.5)	95.5(0.4)	98.0(0.4)	98.1(0.4)	98.7(0.3)	98.4(0.3)	98.6(0.4)	+	+	-	
Above Modal Grade	95.7(0.6)	96.4(0.8)	97.6(1.2)	98.5(0.9)	99.0(0.7)	98.9(****)	97.3(1.3)				
Region											
Northeast	93.8(0.6)	95.2(0.9)	96.6(0.9)	94.5(1.7)	97.3(0.7)	97.3(0.8)	97.5(1.0)	+	+		
Southeast	87.6(1.3)	89.2(1.7)	94.1(1.0)	96.2(0.7)	95.6(1.7)	95.6(0.7)	95.7(0.7)	+	+		
Central	94.9(0.8)	94.8(0.5)	96.8(0.9)	97.8(0.6)	97.9(0.7)	97.3(0.8)	99.0(0.6)	+	+		
West	90.5(1.1)	91.8(1.0)	94.8(1.1)	95.5(1.0)	95.8(1.2)	96.1(1.4)	95.4(0.9)	+	+		
Parents' Education Level											
Less Than H.S.	82.1(1.1)	84.0(1.4)	88.0(2.1)	90.5(2.5)	89.9(3.7)	90.1(3.9)	87.8(3.3)				
Graduated H.S.	90.7(0.6)	92.7(0.6)	93.9(1.2)	93.8(1.2)	94.8(0.9)	94.6(1.1)	95.2(0.9)	+	+		
Some Education After H.S.	95.5(0.5)	96.2(0.7)	97.9(0.6)	98.5(0.7)	98.5(0.4)	98.0(0.8)	98.3(0.8)	+	+		
Graduated College	97.7(0.3)	97.8(0.4)	98.3(0.4)	98.6(0.5)	98.0(0.6)	98.6(0.4)	98.5(0.4)				
Unknown	77.2(2.0)	74.4(3.1)	88.0(4.1)	80.1(4.1)	90.9(4.7)	87.0(5.1)	89.6(5.9)			+	
Type of School											
Public	91.7(0.5)	92.5(0.6)	95.5(0.5)	95.8(0.6)	96.3(0.6)	96.2(0.5)	96.7(0.5)	+	+		
Non-Public	97.1(0.6)	98.1(0.5)	99.4(****)	98.2(1.2)	99.5(****)	98.8(0.6)	98.5(0.8)				
Quartiles											
Upper	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
Middle two	99.4(0.2)	99.7(0.1)	99.9(****)	99.9(****)	100.0(****)	100.0(****)	100.0(****)				
Lower	69.1(1.0)	72.5(1.3)	82.5(1.8)	84.5(2.0)	86.5(1.8)	86.2(1.8)	87.4(1.6)	+	+	-	

Standard errors of the estimated percentages appear in parentheses. When no value appears (****), statistical tests involving this value should be interpreted with caution; standard error estimates may not be accurately determined and/or the sampling distribution of the statistic does not match statistical test assumptions (See Procedural Appendix).

* Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1978.

‡ Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1994.

L Indicates that the positive (+) or negative (-) linear trend is significant.

Q Indicates that the positive (+) or negative (-) quadratic trend is significant.

**** Data are unavailable for this assessment year.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table B.14

NAEP 1996 Mathematics Long-Term Trend Assessment — Age 17
Percentages of students with mathematics scale scores at or above 300



	1978	1982	1986	1990	1992	1994	1996	*	‡	L	Q
TOTAL	51.5(1.1)	48.5(1.3)	51.7(1.4)	56.1(1.4)	59.1(1.3)	58.6(1.4)	60.1(1.7)	+			
Gender											
Male	55.1(1.2)	51.9(1.5)	54.6(1.8)	57.6(1.4)	60.5(1.8)	60.2(2.1)	62.7(1.8)	+			+
Female	48.2(1.3)	45.3(1.4)	48.9(1.7)	54.7(1.8)	57.7(1.6)	57.2(1.4)	57.6(2.2)	+			+
Race/Ethnicity											
White	57.6(1.1)	54.7(1.4)	59.1(1.7)	63.2(1.6)	66.4(1.4)	67.0(1.4)	68.7(2.2)	+			+
Black	16.8(1.6)	17.1(1.5)	20.8(2.8)	32.8(4.5)	29.8(3.9)	29.8(3.4)	31.2(2.5)	+			+
Hispanic	23.4(2.7)	21.6(2.2)	26.5(4.5)	30.1(3.1)	39.2(4.9)	38.3(5.5)	40.1(3.5)	+			+
Other	64.7(4.9)	62.0(6.8)	54.9(8.2)	61.6(7.0)	69.8(4.8)	66.4(6.6)	63.5(7.2)				
Grade											
Below Modal Grade	20.1(1.1)	18.5(1.5)	19.8(2.2)	24.4(2.1)	27.2(2.6)	28.2(2.6)	36.5(2.2)	+			+
At Modal Grade	56.5(1.2)	53.5(1.3)	58.3(1.5)	65.1(1.4)	69.0(1.2)	66.1(1.4)	67.6(2.3)	+			+
Above Modal Grade	61.4(1.6)	58.2(2.0)	56.8(4.4)	63.3(3.7)	70.6(3.8)	72.0(3.8)	66.1(4.3)				+
Region											
Northeast	59.2(2.1)	55.6(2.5)	58.9(2.9)	55.7(3.2)	64.8(2.8)	66.6(3.8)	61.3(4.7)				
Southeast	42.4(1.9)	41.7(2.6)	45.5(2.0)	49.4(2.8)	51.6(2.8)	51.3(2.5)	53.1(3.0)	+			+
Central	57.1(2.3)	52.0(2.3)	53.9(2.6)	65.3(3.3)	68.5(3.0)	60.2(3.2)	69.6(3.5)	+			+
West	45.3(2.3)	43.3(2.7)	48.3(4.1)	53.8(2.6)	53.1(3.3)	57.1(2.6)	56.6(3.3)				+
Parents' Education Level											
Less Than H.S.	26.1(1.4)	23.6(1.6)	21.1(2.9)	29.7(3.4)	30.9(4.2)	27.1(3.8)	22.0(3.0)				
Graduated H.S.	43.2(1.2)	41.0(1.2)	39.8(1.7)	41.6(1.7)	47.2(2.7)	42.8(2.7)	46.8(4.3)				
Some Education After H.S.	57.5(1.4)	55.8(1.4)	55.4(2.5)	61.0(2.0)	60.1(2.8)	58.1(2.0)	60.2(2.3)				
Graduated College	71.7(1.4)	66.8(1.5)	68.2(2.1)	71.1(1.9)	71.2(1.7)	74.0(1.9)	72.5(2.1)				
Unknown	23.9(2.2)	17.9(2.0)	18.3(4.3)	23.3(5.2)	35.3(6.2)	28.0(5.1)	32.4(6.5)				
Type of School											
Public	50.6(1.2)	46.9(1.3)	50.7(1.6)	55.0(1.3)	56.9(1.2)	56.2(1.3)	59.0(1.8)	+			+
Non-Public	67.7(3.3)	66.3(2.4)	75.1(10.6)	71.0(7.9)	79.5(3.7)	75.7(4.3)	71.5(6.4)				
Quartiles											
Upper	97.6(0.4)	98.5(0.4)	99.6(0.3)	99.5(0.2)	99.7(****)	99.6(0.3)	99.7(****)				
Middle two	53.1(0.6)	47.3(1.1)	53.1(1.8)	61.5(1.6)	67.1(1.4)	66.0(1.3)	69.1(1.8)	+			+
Lower	2.4(0.3)	1.0(0.3)	1.2(0.6)	2.0(0.7)	2.5(0.7)	2.8(1.0)	2.5(0.6)				

Standard errors of the estimated percentages appear in parentheses. When no value appears (****), statistical tests involving this value should be interpreted with caution; standard error estimates may not be accurately determined and/or the sampling distribution of the statistic does not match statistical test assumptions (See Procedural Appendix).

* Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1978.

‡ Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1994.

L Indicates that the positive (+) or negative (-) linear trend is significant.

Q Indicates that the positive (+) or negative (-) quadratic trend is significant.

**** Data are unavailable for this assessment year.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table B.15

NAEP 1996 Mathematics Long-Term Trend Assessment — Age 17
Percentages of students with mathematics scale scores at or above 350



	1978	1982	1986	1990	1992	1994	1996	*	‡	L	Q
TOTAL	7.3(0.4)	5.5(0.4)	6.5(0.5)	7.2(0.6)	7.2(0.6)	7.4(0.8)	7.4(0.8)				
Gender											
Male	9.5(0.6)	6.9(0.7)	8.4(0.9)	8.8(0.8)	9.1(0.7)	9.3(1.0)	9.5(1.3)				
Female	5.2(0.7)	4.1(0.4)	4.7(0.6)	5.6(0.8)	5.2(0.8)	5.5(0.9)	5.3(0.8)				
Race/Ethnicity											
White	8.5(0.5)	6.4(0.5)	7.9(0.7)	8.3(0.7)	8.7(0.9)	9.4(1.1)	9.2(1.0)				
Black	0.5(0.2)	0.5(0.3)	0.2(****)	2.0(1.0)	0.9(****)	0.4(****)	0.9(****)				
Hispanic	1.4(0.6)	0.7(0.4)	1.1(****)	1.9(0.8)	1.2(****)	1.4(****)	1.8(****)				
Other	15.4(3.2)	9.5(2.7)	10.8(6.4)	15.9(4.3)	16.9(5.7)	12.1(3.6)	13.7(5.0)				
Grade											
Below Modal Grade	0.7(0.3)	0.7(0.3)	0.4(****)	1.2(0.5)	0.6(****)	1.6(0.5)	1.6(0.8)				
At Modal Grade	8.1(0.5)	6.1(0.5)	7.2(0.6)	8.9(0.7)	8.9(0.8)	8.6(0.8)	9.0(1.1)			+	
Above Modal Grade	11.4(0.9)	8.6(1.4)	13.5(2.4)	8.4(1.8)	14.0(2.9)	11.5(4.0)	10.9(2.2)				
Region											
Northeast	10.3(1.0)	7.3(1.3)	8.9(1.9)	7.3(1.0)	10.3(1.7)	12.4(2.2)	8.2(1.9)				
Southeast	5.1(0.5)	4.0(0.7)	4.9(1.1)	6.8(1.8)	4.9(0.9)	5.0(1.0)	6.0(1.3)				
Central	8.4(1.0)	6.9(0.8)	6.6(1.1)	9.3(1.1)	7.9(1.2)	6.7(1.1)	10.0(1.9)				
West	5.0(0.6)	3.3(0.4)	5.6(1.4)	5.5(1.0)	6.3(1.2)	6.0(1.6)	5.5(1.4)				
Parents' Education Level											
Less Than H.S.	1.4(0.3)	1.0(0.4)	0.5(****)	1.2(****)	0.8(****)	0.7(****)	0.2(****)				
Graduated H.S.	3.9(0.3)	3.1(0.4)	2.7(0.6)	2.4(0.6)	2.9(1.2)	2.3(0.5)	3.2(1.2)				
Some Education After H.S.	7.4(0.7)	5.9(0.6)	6.9(0.9)	6.7(1.0)	5.8(0.8)	4.0(1.1)	4.8(1.0)				-
Graduated College	14.1(0.9)	10.2(1.1)	11.0(1.1)	12.5(1.2)	11.7(1.2)	13.2(1.3)	12.1(1.3)				
Unknown	1.4(0.6)	0.8(0.4)	1.0(****)	0.4(****)	2.0(****)	0.5(****)	0.2(****)				
Type of School											
Public	7.0(0.4)	5.2(0.4)	6.1(0.5)	6.5(0.5)	6.7(0.7)	6.4(0.7)	7.1(0.7)				
Non-Public	12.9(2.7)	8.2(1.4)	16.3(9.1)	15.7(5.3)	12.2(2.7)	14.5(3.5)	10.4(4.0)				
Quartiles											
Upper	27.2(1.0)	21.5(1.3)	25.9(1.6)	27.7(1.7)	28.3(2.4)	29.0(2.4)	28.5(2.4)				
Middle two	1.0(0.2)	0.2(0.1)	0.1(****)	0.2(0.2)	0.3(****)	0.3(0.2)	0.6(0.3)				
Lower	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)	0.0(****)				

Standard errors of the estimated percentages appear in parentheses. When no value appears (****), statistical tests involving this value should be interpreted with caution; standard error estimates may not be accurately determined and/or the sampling distribution of the statistic does not match statistical test assumptions (See Procedural Appendix).

* Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1978.

‡ Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1994.

L Indicates that the positive (+) or negative (-) linear trend is significant.

Q Indicates that the positive (+) or negative (-) quadratic trend is significant.

**** Data are unavailable for this assessment year.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table B.16

NAEP 1996 Long-Term Trend Mathematics Results — Age 9
Scale Score Means, Standard Deviations, and Percentiles



	1978	1982	1986	1990	1992	1994	1996
TOTAL SAMPLE							
Mean	218.6 (0.8)	219.0 (1.1)	221.7 (1.0)	229.6 (0.8)	229.6 (0.8)	231.1 (0.8)	231.0 (0.8)
Standard Deviation	36.0 (0.3)	34.8 (0.4)	34.0 (0.5)	32.9 (0.5)	33.1 (0.5)	33.2 (0.5)	33.8 (0.6)
<i>Percentiles</i>							
5	157.1 (1.0)	159.3 (1.8)	163.0 (1.3)	173.3 (2.6)	172.2 (1.6)	174.1 (1.4)	173.9 (1.1)
10	171.1 (1.2)	173.2 (1.8)	176.7 (1.5)	185.8 (2.2)	185.4 (1.2)	186.8 (1.4)	186.6 (1.5)
25	194.6 (1.0)	196.0 (1.1)	199.0 (1.6)	207.8 (1.3)	207.9 (1.2)	209.0 (0.9)	208.2 (1.0)
50	220.1 (1.0)	220.4 (1.2)	223.3 (1.1)	231.1 (0.9)	231.0 (0.8)	232.5 (1.1)	231.7 (0.8)
75	243.7 (0.9)	243.3 (1.4)	245.6 (1.2)	252.5 (0.7)	252.6 (0.8)	254.7 (0.8)	254.5 (1.0)
90	264.0 (1.2)	262.7 (1.0)	264.2 (1.3)	271.0 (1.0)	270.9 (1.3)	272.4 (1.0)	274.0 (1.7)
95	275.7 (1.2)	273.8 (1.3)	275.5 (1.2)	282.1 (1.3)	281.7 (1.2)	282.9 (1.1)	285.3 (1.5)
MALE STUDENTS							
Mean	217.4 (0.7)	217.1 (1.2)	221.7 (1.1)	229.1 (0.9)	230.8 (1.0)	232.2 (1.0)	232.9 (1.2)
Standard Deviation	36.7 (0.5)	35.8 (0.5)	34.3 (0.8)	33.5 (0.6)	33.5 (0.6)	33.6 (0.6)	34.6 (0.9)
<i>Percentiles</i>							
5	154.9 (2.3)	156.4 (2.1)	162.7 (2.0)	171.8 (2.5)	172.7 (1.5)	174.7 (2.1)	174.5 (2.5)
10	169.0 (1.3)	170.2 (1.4)	176.1 (1.7)	184.6 (2.1)	186.1 (1.4)	186.8 (1.9)	187.8 (2.0)
25	192.8 (1.0)	193.0 (1.5)	198.6 (1.6)	206.7 (1.2)	208.9 (1.6)	209.7 (1.3)	209.7 (1.5)
50	218.4 (0.9)	218.6 (1.7)	223.0 (1.0)	230.4 (1.0)	232.2 (1.0)	233.9 (1.1)	233.7 (1.7)
75	243.0 (1.1)	242.3 (1.6)	245.7 (1.6)	252.4 (0.8)	254.2 (1.1)	256.2 (1.0)	257.4 (1.5)
90	263.8 (1.2)	262.2 (1.2)	265.1 (1.9)	271.6 (1.8)	272.5 (1.2)	274.1 (1.1)	276.8 (1.9)
95	275.2 (1.1)	273.6 (1.9)	276.4 (2.1)	282.8 (1.7)	283.8 (1.4)	284.6 (1.6)	287.9 (1.7)
FEMALE STUDENTS							
Mean	219.9 (1.0)	220.8 (1.2)	221.7 (1.2)	230.2 (1.1)	228.4 (1.0)	230.0 (0.9)	229.0 (0.7)
Standard Deviation	35.3 (0.4)	33.7 (0.5)	33.7 (0.6)	32.4 (0.6)	32.7 (0.7)	32.9 (0.7)	32.9 (0.5)
<i>Percentiles</i>							
5	159.4 (1.3)	162.8 (1.7)	163.5 (2.3)	174.5 (2.8)	171.8 (1.6)	173.5 (1.5)	173.5 (1.4)
10	173.1 (2.0)	176.6 (1.6)	177.5 (2.6)	187.0 (2.7)	184.9 (1.6)	187.0 (1.3)	185.5 (1.6)
25	196.4 (1.2)	198.9 (1.8)	199.2 (1.8)	208.9 (1.3)	206.9 (1.5)	208.6 (1.0)	206.7 (0.9)
50	221.5 (1.0)	222.2 (1.1)	223.5 (1.1)	231.8 (1.0)	229.9 (1.0)	231.5 (1.0)	230.0 (1.4)
75	244.3 (1.5)	244.2 (1.4)	245.5 (1.5)	252.7 (1.0)	251.1 (1.1)	253.5 (1.3)	251.7 (1.6)
90	264.2 (1.4)	263.1 (1.0)	263.3 (1.6)	270.4 (1.3)	269.2 (1.2)	270.8 (1.7)	270.7 (1.3)
95	276.1 (1.8)	273.9 (1.7)	274.2 (2.0)	281.4 (1.1)	279.8 (2.3)	281.0 (1.8)	281.9 (1.8)

The standard errors of the estimated scale scores appear in parentheses.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table B.16
(continued)

NAEP 1996 Long-Term Trend Mathematics Results — Age 9
Scale Score Means, Standard Deviations, and Percentiles



	1978	1982	1986	1990	1992	1994	1996
WHITE STUDENTS							
Mean	224.1 (0.9)	224.0 (1.1)	226.9 (1.1)	235.2 (0.8)	235.1 (0.8)	236.8 (1.0)	236.9 (1.0)
Standard Deviation	34.0 (0.3)	32.8 (0.4)	32.6 (0.5)	31.2 (0.5)	31.0 (0.5)	31.4 (0.4)	32.4 (0.6)
<i>Percentiles</i>							
5	166.3 (1.5)	168.1 (1.4)	170.6 (2.4)	181.8 (2.4)	181.8 (1.5)	182.4 (2.4)	182.5 (1.4)
10	179.4 (1.5)	180.8 (1.7)	183.9 (1.7)	194.0 (1.6)	194.2 (1.5)	194.7 (1.1)	194.8 (1.8)
25	201.4 (1.1)	201.9 (1.3)	205.3 (1.1)	214.6 (0.9)	215.0 (0.9)	216.5 (1.3)	215.0 (1.4)
50	225.1 (1.0)	225.3 (1.4)	228.3 (1.1)	236.3 (1.0)	236.1 (1.1)	238.3 (1.1)	237.8 (1.2)
75	247.7 (0.8)	246.8 (0.9)	249.6 (0.8)	256.4 (0.6)	256.4 (1.0)	258.9 (1.1)	259.7 (0.8)
90	267.0 (1.1)	265.3 (1.0)	267.4 (1.2)	274.5 (0.8)	273.9 (1.3)	275.3 (1.1)	278.2 (1.0)
95	278.4 (1.7)	276.0 (1.3)	278.2 (1.8)	284.8 (2.1)	284.5 (1.6)	285.7 (1.2)	288.8 (1.6)
BLACK STUDENTS							
Mean	192.4 (1.1)	194.9 (1.6)	201.6 (1.6)	208.4 (2.2)	208.0 (2.0)	212.1 (1.6)	211.6 (1.4)
Standard Deviation	34.5 (0.8)	33.7 (0.8)	31.7 (1.1)	31.5 (0.8)	31.8 (0.7)	30.8 (1.1)	31.1 (0.9)
<i>Percentiles</i>							
5	133.7 (1.9)	136.7 (2.5)	146.2 (3.2)	156.0 (1.7)	154.9 (3.4)	159.8 (3.8)	158.1 (6.3)
10	147.0 (1.7)	150.4 (2.3)	158.4 (4.9)	167.1 (3.7)	165.9 (2.9)	171.1 (3.0)	170.7 (3.1)
25	169.3 (1.9)	172.5 (2.0)	180.5 (4.1)	186.0 (4.1)	185.5 (2.4)	191.3 (1.7)	190.2 (2.0)
50	193.0 (1.1)	196.6 (2.0)	202.9 (1.6)	208.4 (3.1)	208.6 (2.1)	213.3 (1.7)	213.3 (1.5)
75	216.4 (1.6)	218.2 (2.0)	223.6 (2.0)	231.4 (2.1)	230.4 (2.0)	233.7 (1.0)	233.9 (1.4)
90	236.1 (1.6)	236.7 (2.5)	241.2 (1.7)	248.9 (2.9)	249.2 (2.1)	251.6 (5.2)	250.1 (1.3)
95	247.5 (1.4)	247.9 (2.8)	251.3 (1.3)	258.9 (4.3)	258.7 (3.4)	261.6 (2.2)	259.9 (2.7)
HISPANIC STUDENTS							
Mean	202.9 (2.2)	204.0 (1.3)	205.4 (2.1)	213.8 (2.1)	211.9 (2.3)	209.9 (2.3)	214.7 (1.7)
Standard Deviation	35.1 (1.4)	32.8 (1.1)	31.1 (1.9)	30.3 (1.2)	31.9 (1.4)	30.7 (1.3)	31.6 (1.2)
<i>Percentiles</i>							
5	144.4 (5.4)	148.1 (2.8)	154.8 (3.7)	161.8 (3.4)	158.6 (4.4)	159.1 (3.3)	163.5 (8.7)
10	156.3 (3.7)	160.8 (3.2)	163.8 (1.8)	173.4 (1.4)	169.0 (3.5)	170.3 (4.1)	173.3 (4.1)
25	178.7 (3.2)	181.3 (2.3)	184.6 (3.2)	193.1 (3.6)	189.7 (2.2)	189.8 (3.0)	191.6 (2.3)
50	204.3 (3.0)	205.2 (1.6)	206.3 (2.4)	216.2 (4.1)	211.8 (3.5)	210.5 (2.5)	215.2 (1.7)
75	227.2 (2.5)	226.5 (2.0)	226.0 (3.8)	235.1 (3.3)	233.8 (3.4)	230.3 (3.8)	237.3 (2.4)
90	249.5 (4.0)	246.4 (3.4)	244.8 (3.8)	251.7 (3.4)	252.7 (3.8)	249.4 (4.4)	256.0 (4.2)
95	259.6 (4.6)	256.6 (2.9)	254.4 (4.6)	262.2 (3.5)	263.1 (6.8)	259.4 (7.3)	265.8 (4.6)

The standard errors of the estimated scale scores appear in parentheses.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table B.17

NAEP 1996 Long-Term Trend Mathematics Results — Age 13

Scale Score Means, Standard Deviations, and Percentiles



	1978	1982	1986	1990	1992	1994	1996
TOTAL SAMPLE							
Mean	264.1 (1.1)	268.6 (1.1)	269.0 (1.2)	270.4 (0.9)	273.1 (0.9)	274.3 (1.0)	274.3 (0.8)
Standard Deviation	39.0 (0.5)	33.4 (0.5)	30.8 (0.5)	31.1 (0.5)	30.9 (0.6)	32.4 (0.5)	31.6 (0.6)
<i>Percentiles</i>							
5	198.2 (1.6)	212.4 (2.7)	218.3 (1.8)	217.6 (2.2)	220.5 (2.0)	219.7 (2.0)	221.3 (1.0)
10	213.3 (1.5)	225.3 (1.6)	230.0 (1.4)	230.2 (1.4)	233.2 (1.2)	232.5 (1.4)	233.3 (0.9)
25	238.1 (1.3)	246.2 (1.2)	248.3 (1.8)	249.8 (0.9)	252.9 (1.1)	253.3 (1.3)	253.8 (0.8)
50	265.2 (1.1)	269.5 (1.0)	268.7 (1.3)	270.9 (1.0)	274.1 (0.7)	275.6 (0.9)	275.2 (0.7)
75	291.1 (1.1)	291.6 (1.1)	289.6 (1.3)	291.7 (1.0)	294.0 (1.0)	296.5 (1.2)	295.6 (1.5)
90	313.4 (1.2)	310.8 (1.2)	309.2 (1.5)	309.9 (1.0)	311.9 (1.6)	314.6 (1.2)	313.8 (1.9)
95	326.6 (1.3)	322.2 (1.2)	320.5 (2.2)	320.1 (1.6)	322.9 (1.2)	326.1 (1.5)	324.9 (1.3)
MALE STUDENTS							
Mean	263.6 (1.3)	269.2 (1.4)	270.0 (1.1)	271.2 (1.2)	274.1 (1.1)	276.0 (1.3)	276.3 (0.9)
Standard Deviation	40.1 (0.5)	34.4 (0.7)	31.6 (0.7)	32.4 (0.7)	31.6 (0.9)	33.5 (0.8)	32.1 (0.8)
<i>Percentiles</i>							
5	195.8 (1.4)	211.5 (2.2)	218.0 (1.8)	215.5 (2.1)	220.5 (2.9)	218.9 (2.9)	222.2 (1.5)
10	211.4 (1.4)	224.3 (2.0)	229.5 (1.7)	228.6 (2.0)	233.2 (2.0)	232.6 (2.6)	234.0 (1.5)
25	236.7 (1.4)	246.1 (1.5)	248.9 (2.3)	250.2 (1.7)	253.1 (1.8)	254.8 (1.7)	255.5 (1.4)
50	264.8 (1.4)	270.2 (1.2)	270.1 (1.6)	272.0 (1.0)	274.9 (1.0)	278.0 (1.3)	277.5 (1.0)
75	291.5 (1.5)	293.3 (1.2)	291.4 (1.6)	293.1 (1.2)	295.7 (0.8)	298.9 (1.5)	298.0 (1.7)
90	314.4 (1.7)	312.5 (1.5)	310.8 (1.5)	312.4 (1.4)	314.0 (1.6)	317.2 (2.2)	316.9 (2.0)
95	327.5 (1.5)	324.1 (1.3)	322.0 (2.6)	323.1 (1.9)	324.8 (2.1)	328.7 (2.2)	327.4 (1.5)
FEMALE STUDENTS							
Mean	264.7 (1.1)	268.0 (1.1)	267.9 (1.5)	269.6 (0.9)	272.0 (1.0)	272.7 (1.0)	272.4 (1.0)
Standard Deviation	37.9 (0.6)	32.3 (0.5)	30.0 (0.7)	29.7 (0.5)	30.3 (0.6)	31.1 (0.5)	31.0 (0.7)
<i>Percentiles</i>							
5	200.9 (2.6)	213.5 (1.5)	218.5 (3.2)	220.4 (2.3)	220.6 (1.0)	220.4 (1.9)	220.7 (1.7)
10	215.0 (1.6)	226.2 (1.4)	230.6 (2.0)	231.4 (1.2)	233.0 (1.3)	232.5 (1.5)	232.7 (1.2)
25	239.4 (1.4)	246.3 (1.1)	247.8 (1.6)	249.5 (1.1)	252.7 (1.2)	252.3 (0.8)	252.3 (0.9)
50	265.7 (1.2)	268.8 (0.9)	267.4 (1.7)	269.9 (1.2)	273.4 (1.0)	273.5 (0.9)	273.0 (1.1)
75	290.7 (1.0)	290.1 (1.1)	287.8 (1.7)	290.3 (1.3)	292.2 (1.3)	293.9 (1.6)	293.1 (1.7)
90	312.4 (1.4)	308.8 (1.5)	307.2 (2.8)	307.7 (1.5)	309.8 (1.2)	311.4 (1.7)	311.1 (2.0)
95	325.6 (1.2)	320.1 (2.0)	318.5 (2.4)	317.3 (0.8)	320.8 (1.1)	323.1 (2.9)	322.5 (3.0)

The standard errors of the estimated scale scores appear in parentheses.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table B.17
(continued)

NAEP 1996 Long-Term Trend Mathematics Results — Age 13
Scale Score Means, Standard Deviations, and Percentiles



	1978	1982	1986	1990	1992	1994	1996
WHITE STUDENTS							
Mean	271.6 (0.8)	274.4 (1.0)	273.6 (1.3)	276.3 (1.1)	278.9 (0.9)	280.8 (0.9)	281.2 (0.9)
Standard Deviation	35.7 (0.5)	31.0 (0.4)	29.4 (0.6)	29.0 (0.5)	28.5 (0.5)	29.8 (0.6)	28.7 (0.6)
<i>Percentiles</i>							
5	211.9 (1.4)	223.0 (1.6)	225.7 (1.5)	228.2 (1.5)	230.9 (1.6)	230.7 (1.0)	233.1 (1.6)
10	225.5 (1.4)	234.4 (1.2)	236.5 (1.3)	239.3 (1.0)	242.2 (1.4)	242.8 (1.1)	244.5 (1.3)
25	247.6 (0.9)	253.5 (1.1)	254.1 (1.4)	257.3 (1.1)	260.5 (0.8)	262.0 (1.1)	262.2 (1.1)
50	272.2 (1.0)	274.9 (0.9)	273.3 (1.0)	276.6 (1.0)	279.4 (1.0)	281.9 (1.2)	281.3 (1.0)
75	296.0 (0.7)	295.5 (1.0)	293.2 (1.3)	296.0 (1.1)	298.0 (1.1)	300.5 (1.3)	300.3 (0.9)
90	317.1 (1.2)	313.8 (1.4)	312.1 (2.2)	313.2 (1.3)	315.1 (1.3)	317.7 (1.5)	317.7 (1.5)
95	329.6 (1.3)	324.8 (1.4)	322.9 (1.8)	322.9 (1.6)	325.2 (1.4)	328.6 (1.7)	328.0 (1.8)
BLACK STUDENTS							
Mean	229.6 (1.9)	240.4 (1.6)	249.2 (2.3)	249.1 (2.3)	250.2 (1.9)	251.5 (3.5)	252.1 (1.3)
Standard Deviation	36.0 (0.6)	31.0 (1.1)	28.3 (1.1)	28.7 (1.2)	30.1 (1.2)	31.5 (2.2)	29.5 (1.1)
<i>Percentiles</i>							
5	170.2 (1.9)	189.0 (4.3)	201.7 (4.5)	201.6 (5.4)	199.5 (4.5)	201.8 (7.7)	203.9 (3.2)
10	184.1 (2.6)	200.2 (3.7)	213.2 (2.3)	211.8 (2.2)	212.3 (5.1)	212.8 (3.8)	214.2 (3.9)
25	205.5 (1.9)	219.3 (1.8)	230.7 (2.2)	229.9 (3.0)	231.1 (3.0)	231.2 (3.6)	232.2 (1.3)
50	229.0 (2.2)	241.0 (1.9)	249.3 (2.3)	249.4 (2.0)	250.6 (1.9)	250.6 (3.8)	252.6 (2.1)
75	254.1 (2.2)	260.9 (1.4)	266.9 (1.5)	267.8 (2.9)	270.9 (1.8)	271.1 (4.8)	271.8 (2.0)
90	276.4 (2.4)	279.7 (2.2)	284.4 (3.7)	285.3 (2.8)	286.5 (2.1)	291.7 (3.5)	289.2 (2.1)
95	288.4 (3.9)	291.1 (1.7)	296.4 (4.3)	296.2 (4.1)	297.4 (3.5)	304.2 (8.3)	299.6 (3.4)
HISPANIC STUDENTS							
Mean	238.0 (2.0)	252.4 (1.7)	254.3 (2.9)	254.6 (1.8)	259.3 (1.8)	256.0 (1.9)	255.7 (1.6)
Standard Deviation	35.2 (1.1)	31.0 (1.0)	29.3 (1.3)	29.9 (1.2)	28.1 (1.0)	28.8 (1.2)	30.6 (1.0)
<i>Percentiles</i>							
5	180.2 (1.8)	202.3 (2.2)	205.9 (3.6)	206.2 (3.7)	212.2 (3.5)	208.8 (2.8)	203.6 (2.5)
10	192.5 (2.2)	213.5 (2.6)	216.2 (3.8)	216.4 (3.1)	224.0 (2.4)	219.4 (3.0)	216.6 (3.5)
25	214.3 (1.8)	230.7 (1.9)	235.5 (2.7)	234.3 (2.2)	240.6 (3.2)	237.5 (2.3)	236.5 (3.3)
50	237.4 (2.0)	251.9 (1.4)	254.3 (3.4)	255.1 (1.9)	259.4 (2.3)	255.8 (1.6)	255.7 (1.2)
75	261.9 (3.2)	273.7 (1.4)	274.2 (2.4)	275.2 (3.5)	278.6 (2.9)	274.3 (2.2)	276.8 (1.8)
90	283.7 (3.4)	292.8 (2.4)	291.7 (3.1)	292.2 (2.9)	294.9 (1.6)	292.7 (2.3)	293.2 (1.9)
95	296.3 (3.1)	304.1 (2.9)	301.2 (1.9)	303.3 (3.3)	304.1 (3.2)	304.3 (9.7)	304.8 (4.5)

The standard errors of the estimated scale scores appear in parentheses.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table B.18

NAEP 1996 Long-Term Trend Mathematics Results — Age 17
Scale Score Means, Standard Deviations, and Percentiles



	1978	1982	1986	1990	1992	1994	1996
TOTAL SAMPLE							
Mean	300.4 (1.0)	298.5 (0.9)	302.0 (0.9)	304.6 (0.9)	306.7 (0.9)	306.2 (1.0)	307.2 (1.2)
Standard Deviation	34.9 (0.3)	32.4 (0.4)	31.0 (0.5)	31.1 (0.6)	30.1 (0.5)	30.2 (0.6)	30.2 (0.5)
<i>Percentiles</i>							
5	241.3 (1.3)	244.9 (1.1)	251.7 (1.2)	253.4 (1.0)	255.6 (2.1)	255.9 (1.9)	256.0 (1.8)
10	254.2 (1.1)	255.9 (1.0)	262.7 (1.0)	264.0 (1.1)	267.2 (1.6)	267.0 (1.0)	267.1 (1.5)
25	276.4 (1.2)	275.8 (1.3)	280.7 (0.6)	282.5 (1.0)	286.3 (1.2)	285.6 (1.0)	286.4 (1.2)
50	301.4 (1.1)	298.8 (1.0)	301.4 (1.3)	304.9 (1.1)	307.6 (1.0)	306.4 (1.2)	308.3 (1.7)
75	325.4 (1.0)	321.5 (0.8)	323.1 (1.9)	326.5 (1.2)	328.0 (1.0)	327.0 (1.2)	328.7 (1.5)
90	344.7 (0.8)	340.6 (0.9)	343.0 (1.3)	344.5 (1.3)	345.2 (1.1)	345.5 (1.5)	345.6 (1.5)
95	355.7 (0.9)	351.2 (1.1)	354.0 (1.1)	355.5 (2.2)	354.8 (1.0)	355.5 (1.7)	354.7 (1.6)
MALE STUDENTS							
Mean	303.8 (1.0)	301.5 (1.0)	304.7 (1.2)	306.3 (1.1)	308.9 (1.1)	308.5 (1.4)	309.5 (1.3)
Standard Deviation	35.4 (0.4)	32.8 (0.5)	32.0 (0.7)	32.3 (0.7)	30.8 (0.6)	30.9 (0.6)	31.1 (0.8)
<i>Percentiles</i>							
5	243.8 (1.2)	247.0 (1.3)	252.7 (3.0)	252.8 (3.0)	257.8 (1.7)	258.0 (1.8)	257.6 (3.9)
10	257.0 (1.2)	257.9 (1.2)	264.1 (1.2)	263.9 (1.2)	268.9 (1.8)	268.4 (2.9)	268.8 (2.4)
25	278.9 (1.2)	278.1 (1.1)	282.3 (1.8)	283.7 (1.3)	287.8 (1.2)	286.8 (2.2)	287.9 (2.2)
50	304.8 (1.3)	301.8 (1.6)	303.9 (1.2)	306.4 (1.6)	309.0 (1.6)	308.3 (1.9)	310.6 (1.2)
75	329.5 (1.1)	325.1 (1.2)	327.8 (2.1)	329.3 (1.1)	331.4 (1.1)	330.7 (1.8)	331.6 (2.0)
90	349.2 (1.0)	344.4 (1.1)	346.7 (1.6)	347.8 (1.4)	348.6 (1.3)	348.9 (1.7)	349.2 (2.1)
95	360.1 (1.0)	354.4 (1.8)	357.5 (1.7)	358.5 (1.3)	358.1 (1.4)	358.8 (1.6)	359.3 (3.2)
FEMALE STUDENTS							
Mean	297.1 (1.0)	295.6 (1.0)	299.4 (1.0)	302.9 (1.1)	304.5 (1.1)	304.1 (1.1)	304.9 (1.4)
Standard Deviation	34.0 (0.4)	31.7 (0.4)	29.9 (0.7)	29.9 (0.9)	29.3 (0.7)	29.1 (0.7)	29.2 (0.5)
<i>Percentiles</i>							
5	239.3 (1.3)	242.8 (1.6)	250.3 (2.8)	253.9 (1.9)	253.7 (2.3)	254.0 (3.2)	254.7 (2.2)
10	252.2 (1.0)	254.1 (1.2)	261.2 (1.4)	264.0 (1.5)	265.6 (2.4)	266.2 (1.0)	265.6 (1.8)
25	274.3 (1.3)	273.7 (1.2)	279.3 (1.3)	281.5 (1.3)	284.8 (1.1)	285.1 (1.1)	285.2 (1.6)
50	298.3 (1.1)	296.1 (1.2)	299.1 (1.3)	303.7 (1.7)	305.8 (1.5)	304.9 (1.3)	305.9 (1.7)
75	321.5 (1.0)	317.7 (0.8)	319.8 (1.7)	324.1 (1.2)	324.8 (1.2)	323.7 (1.3)	326.0 (1.3)
90	340.3 (1.4)	336.7 (1.7)	338.2 (2.2)	341.4 (1.6)	341.4 (2.1)	341.0 (2.1)	342.2 (1.7)
95	350.4 (1.5)	347.2 (1.5)	349.3 (1.9)	351.8 (2.2)	350.6 (2.3)	351.5 (2.9)	350.5 (1.3)

The standard errors of the estimated scale scores appear in parentheses.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table B.18
(continued)

NAEP 1996 Long-Term Trend Mathematics Results — Age 17
Scale Score Means, Standard Deviations, and Percentiles



	1978	1982	1986	1990	1992	1994	1996
WHITE STUDENTS							
Mean	305.9 (0.9)	303.7 (0.9)	307.5 (1.0)	309.5 (1.0)	311.9 (0.8)	312.3 (1.1)	313.4 (1.4)
Standard Deviation	32.3 (0.2)	30.4 (0.4)	29.1 (0.6)	29.5 (0.5)	28.4 (0.5)	28.6 (0.6)	28.0 (0.5)
<i>Percentiles</i>							
5	251.9 (0.6)	253.3 (1.1)	261.2 (1.6)	260.2 (1.3)	264.1 (2.0)	264.8 (1.7)	265.8 (1.2)
10	263.3 (1.3)	263.8 (1.1)	270.5 (1.3)	270.5 (1.5)	274.4 (1.4)	275.3 (1.7)	276.4 (1.6)
25	283.5 (1.0)	282.3 (1.1)	286.9 (1.2)	288.8 (1.5)	292.8 (1.1)	293.1 (1.5)	294.3 (1.7)
50	306.6 (1.0)	303.9 (1.2)	306.8 (1.3)	310.1 (1.3)	312.8 (1.0)	312.4 (1.3)	314.6 (1.7)
75	328.9 (0.8)	325.1 (0.9)	327.8 (1.7)	330.1 (1.2)	332.2 (1.0)	332.2 (1.2)	333.1 (1.5)
90	347.3 (0.7)	343.4 (1.1)	346.1 (1.3)	347.2 (1.0)	348.0 (1.0)	349.1 (1.6)	348.9 (1.4)
95	357.8 (0.7)	353.4 (1.5)	356.0 (1.4)	357.1 (1.3)	357.4 (1.2)	358.9 (1.8)	357.7 (1.8)
BLACK STUDENTS							
Mean	268.4 (1.3)	271.8 (1.2)	278.6 (2.1)	288.5 (2.8)	285.8 (2.2)	285.5 (1.8)	286.4 (1.7)
Standard Deviation	31.8 (1.0)	29.2 (0.7)	26.4 (1.4)	27.9 (1.7)	27.5 (1.3)	25.6 (1.0)	27.7 (0.9)
<i>Percentiles</i>							
5	217.2 (2.0)	225.1 (1.4)	236.7 (3.9)	245.4 (4.4)	238.5 (4.3)	241.1 (5.7)	240.9 (6.4)
10	227.8 (1.7)	234.5 (1.7)	244.3 (4.2)	253.5 (3.5)	248.9 (6.9)	251.1 (1.9)	251.3 (2.1)
25	245.7 (1.2)	251.4 (1.6)	259.9 (1.6)	268.7 (1.8)	267.4 (3.8)	268.2 (2.5)	267.9 (2.5)
50	267.7 (1.6)	271.2 (1.4)	278.6 (3.9)	287.1 (2.5)	286.9 (1.9)	285.9 (2.1)	285.9 (1.4)
75	290.5 (2.2)	291.2 (1.7)	296.1 (2.5)	307.1 (5.3)	303.9 (3.9)	303.4 (2.0)	305.6 (2.3)
90	310.3 (2.1)	310.8 (1.7)	312.0 (7.4)	325.7 (5.8)	320.8 (2.3)	317.3 (4.1)	322.5 (3.4)
95	320.7 (2.5)	321.3 (2.2)	324.8 (4.1)	337.7 (4.2)	330.8 (3.0)	326.1 (6.5)	333.2 (4.9)
HISPANIC STUDENTS							
Mean	276.3 (2.3)	276.7 (1.8)	283.1 (2.9)	283.5 (2.9)	292.2 (2.6)	290.8 (3.7)	292.0 (2.1)
Standard Deviation	32.9 (1.0)	29.3 (1.0)	28.7 (2.0)	31.8 (1.8)	26.9 (1.0)	28.4 (1.7)	29.2 (1.4)
<i>Percentiles</i>							
5	224.1 (4.4)	232.0 (1.7)	236.3 (5.3)	229.1 (5.4)	247.5 (4.3)	244.5 (5.1)	243.3 (12.0)
10	234.0 (2.9)	240.7 (3.2)	248.5 (4.5)	242.2 (8.1)	257.8 (3.5)	253.6 (5.8)	253.7 (3.0)
25	253.4 (1.8)	255.8 (2.4)	264.7 (2.8)	263.8 (6.8)	273.3 (4.5)	271.1 (3.8)	272.2 (2.3)
50	275.1 (3.6)	275.3 (3.2)	283.1 (2.5)	281.8 (2.4)	291.6 (3.4)	290.1 (5.4)	292.8 (2.2)
75	298.5 (3.9)	297.1 (2.6)	301.2 (4.2)	304.0 (4.4)	310.7 (3.7)	311.0 (5.5)	312.3 (3.5)
90	319.5 (3.9)	314.9 (2.6)	318.6 (2.3)	325.1 (3.6)	327.7 (4.8)	328.7 (3.6)	330.0 (4.0)
95	332.0 (0.9)	326.7 (4.4)	329.3 (7.3)	336.3 (8.6)	336.4 (2.7)	338.4 (2.9)	340.6 (7.4)

The standard errors of the estimated scale scores appear in parentheses.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Data Appendix C

Reading

Table C.1

NAEP 1996 Reading Long-Term Trend Assessment — Age 9
Percentages of students with Reading scale scores at or above 150



	1971	1975	1980	1984	1988	1990	1992	1994	1996	*	‡	L	Q
TOTAL	90.6 (0.5)	93.1 (0.4)	94.6 (0.4)	92.3 (0.3)	92.7 (0.7)	90.1 (0.9)	92.3 (0.4)	92.1 (0.7)	93.5 (0.6)	+			
Gender													
Male	87.9 (0.7)	91.0 (0.5)	92.9 (0.5)	90.4 (0.5)	90.4 (0.9)	87.9 (1.4)	90.2 (0.8)	90.2 (1.0)	91.6 (0.8)	+			
Female	93.2 (0.5)	95.3 (0.3)	96.4 (0.4)	94.2 (0.4)	94.9 (1.0)	92.4 (1.1)	94.4 (0.6)	94.0 (0.8)	95.3 (0.6)	+			
Race/Ethnicity													
White	94.0 (0.4)	96.0 (0.3)	97.1 (0.2)	95.4 (0.3)	95.1 (0.7)	93.5 (0.9)	95.8 (0.5)	95.7 (0.5)	96.4 (0.6)	+			
Black	69.7 (1.7)	80.7 (1.1)	84.9 (1.4)	81.3 (1.0)	83.2 (2.4)	76.9 (2.7)	79.6 (2.2)	78.7 (2.4)	84.5 (1.9)	+	+	-	
Hispanic	*****	80.8 (2.5)	84.5 (1.8)	82.0 (2.1)	85.6 (3.5)	83.7 (1.8)	83.4 (2.6)	80.4 (4.6)	85.8 (2.4)				
Other	86.0 (1.9)	92.4 (1.9)	96.1 (1.2)	95.4 (1.1)	96.9 (1.8)	89.3 (3.1)	90.8 (2.9)	91.0 (3.4)	95.4 (2.3)	+			-
Grade													
Below Modal Grade	75.6 (1.3)	81.2 (1.1)	84.4 (1.0)	82.1 (0.7)	85.0 (1.9)	82.2 (1.9)	85.4 (0.9)	85.7 (1.6)	87.1 (1.4)	+		+	
At Modal Grade	95.4 (0.4)	96.8 (0.3)	98.6 (0.2)	97.4 (0.2)	97.1 (0.7)	95.8 (0.6)	97.4 (0.4)	96.3 (0.7)	96.6 (0.5)				-
Above Modal Grade	98.0 (1.3)	98.8 (****)	97.5 (1.6)	100.0(****)	*****	*****	*****	*****	*****				
Region													
Northeast	93.4 (0.9)	94.1 (0.5)	96.4 (0.7)	94.2 (0.6)	92.8 (1.3)	92.6 (1.6)	94.8 (0.9)	95.0 (2.0)	95.9 (0.8)				
Southeast	82.7 (1.9)	89.8 (0.8)	93.0 (0.9)	89.7 (0.8)	91.3 (1.7)	84.5 (2.4)	87.1 (1.1)	90.3 (1.8)	90.6 (2.1)				
Central	93.6 (0.5)	95.6 (0.5)	95.8 (0.7)	94.3 (0.6)	95.4 (0.7)	92.7 (1.4)	95.1 (0.9)	94.2 (1.3)	94.5 (1.4)				
West	91.0 (1.1)	92.4 (1.0)	93.6 (0.8)	90.9 (0.9)	91.5 (1.6)	90.6 (1.3)	91.8 (1.3)	89.4 (1.8)	92.9 (1.1)				
Parents' Education Level													
Less Than H.S.	82.3 (1.4)	84.4 (1.2)	85.6 (1.5)	86.2 (1.3)	84.4 (4.4)	83.0 (3.8)	86.4 (5.4)	82.3 (3.8)	89.7 (3.9)				
Graduated H.S.	92.1 (0.7)	94.2 (0.5)	94.9 (0.6)	92.8 (0.7)	92.3 (2.1)	91.2 (1.3)	91.4 (1.6)	91.9 (1.4)	90.4 (1.7)				
Post H.S.	96.1 (0.4)	96.5 (0.4)	97.3 (0.4)	95.4 (0.4)	95.1 (0.8)	92.6 (1.2)	94.8 (0.5)	95.3 (0.7)	95.5 (0.8)				-
Unknown	86.7 (0.7)	91.5 (0.5)	92.7 (0.9)	91.0 (0.4)	90.9 (1.2)	87.6 (1.4)	91.3 (0.8)	89.2 (1.5)	92.6 (1.4)	+			
Type of School													
Public	*****	*****	94.2 (0.4)	91.7 (0.4)	92.1 (0.8)	89.6 (1.0)	91.5 (0.5)	91.4 (0.8)	92.7 (0.7)				-
Non-Public	*****	*****	98.1(0.4)	96.8 (0.5)	96.7 (1.3)	96.2 (1.7)	97.9 (1.2)	97.7 (1.3)	98.2 (1.2)				+
Quartiles													
Upper	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				
Middle two	99.6 (0.1)	100.0 (0.0)	99.9 (****)	99.9 (0.1)	99.7 (0.2)	99.1 (0.5)	99.6 (0.1)	99.6(****)	99.7 (0.2)				
Lower	63.1 (1.1)	72.6 (1.0)	78.7 (1.2)	69.7 (0.9)	71.3 (2.3)	62.2 (3.0)	69.9 (1.4)	69.1 (2.6)	74.5 (2.4)	+			

Standard errors of the estimated percentages appear in parentheses. When no value appears (****), statistical tests involving this value should be interpreted with caution; standard error estimates may not be accurately determined and/or the sampling distribution of the statistic does not match statistical test assumptions (See Procedural Appendix).

* Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1971.

‡ Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1994.

L Indicates that the positive (+) or negative (-) linear trend is significant.

Q Indicates that the positive (+) or negative (-) quadratic trend is significant.

***** Data are unavailable for this assessment year.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table C.2

NAEP 1996 Reading Long-Term Trend Assessment — Age 9
Percentages of students with Reading scale scores at or above 200



	1971	1975	1980	1984	1988	1990	1992	1994	1996	*	‡	L	Q
TOTAL	58.7 (1.0)	62.1 (0.8)	67.7 (1.0)	61.5 (0.7)	62.6 (1.3)	58.9 (1.3)	62.0 (1.1)	63.3 (1.4)	64.2 (1.3)	+			
Gender													
Male	52.7 (1.2)	56.2 (1.0)	62.7 (1.1)	58.0 (0.9)	58.4 (1.8)	53.8 (1.9)	56.9 (1.6)	59.2 (1.5)	58.3 (2.0)	+			-
Female	64.6 (1.1)	68.1 (0.8)	72.7 (1.0)	65.2 (0.8)	66.9 (1.4)	64.2 (1.2)	67.3 (1.2)	67.3 (1.9)	69.9 (1.6)	+			
Race/Ethnicity													
White	65.0 (1.0)	69.0 (0.8)	74.2 (0.7)	68.6 (0.8)	68.4 (1.6)	66.0 (1.4)	69.3 (1.2)	70.1 (1.5)	71.4 (1.5)	+			
Black	22.0 (1.5)	31.6 (1.5)	41.3 (1.9)	36.6 (1.5)	39.4 (2.9)	33.9 (3.4)	36.6 (2.2)	38.3 (2.8)	41.8 (3.2)	+		+	-
Hispanic	*****	34.6 (3.0)	41.6 (2.6)	39.6 (2.2)	45.9 (3.3)	40.9 (2.7)	43.1 (3.5)	37.1 (4.6)	48.0 (3.8)	+			
Other	42.0 (5.2)	58.8 (5.3)	72.9 (3.7)	72.7 (2.9)	77.1 (4.8)	56.8 (4.5)	59.7 (4.9)	65.4 (4.8)	65.8 (4.5)	+			-
Grade													
Below Modal Grade	28.8 (1.4)	33.8 (1.2)	40.4 (1.5)	38.0 (1.0)	43.4 (2.1)	40.1 (1.8)	43.5 (1.8)	47.1 (2.5)	46.0 (3.1)	+		+	
At Modal Grade	68.1 (1.1)	70.7 (0.7)	78.3 (0.8)	73.5 (0.7)	73.7 (1.5)	72.5 (1.6)	76.0 (0.9)	73.9 (1.4)	73.1 (1.5)	+		+	-
Above Modal Grade	81.0 (4.8)	79.8 (4.7)	88.5 (5.4)	93.4 (3.8)	*****	*****	*****	*****	*****				
Region													
Northeast	64.1 (1.6)	66.8 (1.5)	73.5 (2.1)	66.5 (1.5)	65.7 (2.5)	65.4 (2.8)	69.3 (2.8)	70.1 (3.6)	71.1 (1.9)	+			
Southeast	45.9 (2.8)	53.1 (1.2)	62.6 (2.4)	54.8 (1.6)	58.0 (2.6)	48.2 (3.3)	50.6 (1.9)	60.8 (2.8)	57.4 (2.8)	+			
Central	65.7 (1.4)	67.4 (1.3)	69.4 (1.2)	66.0 (1.6)	68.4 (1.7)	62.6 (2.0)	67.7 (1.9)	65.5 (2.0)	66.6 (3.5)				
West	55.6 (1.8)	59.5 (2.1)	65.9 (1.5)	58.9 (1.5)	59.5 (3.5)	59.6 (2.9)	60.4 (3.0)	57.8 (3.3)	62.0 (2.4)				
Parents' Education Level													
Less Than H.S.	39.4 (1.7)	41.8 (1.4)	47.5 (1.6)	47.4 (2.1)	44.0 (7.1)	42.8 (4.1)	46.4 (4.5)	43.3 (6.3)	48.5 (4.8)				
Graduated H.S.	59.6 (1.3)	64.1 (1.0)	66.5 (1.3)	60.0 (1.3)	62.7 (3.4)	59.4 (2.9)	60.4 (2.4)	59.4 (3.3)	59.0 (2.6)				
Post H.S.	73.7 (1.1)	73.3 (1.0)	77.8 (1.1)	71.9 (0.9)	69.7 (1.3)	65.9 (2.0)	70.7 (1.5)	72.5 (1.5)	70.8 (1.5)				-
Unknown	49.3 (1.2)	55.1 (1.0)	59.0 (1.1)	55.9 (1.0)	56.1 (1.9)	52.7 (1.9)	55.2 (1.9)	55.3 (1.6)	59.8 (1.9)	+		+	
Type of School													
Public	*****	*****	66.2 (1.0)	60.0 (0.8)	61.1 (1.5)	57.5 (1.5)	60.0 (1.1)	61.6 (1.6)	61.6 (1.4)				+
Non-Public	*****	*****	79.3 (1.8)	73.9 (1.7)	73.5 (2.5)	74.8 (3.0)	77.1 (2.5)	77.1 (3.4)	80.0 (3.5)				
Quartiles													
Upper	98.7 (0.3)	99.2 (0.2)	99.6 (0.2)	99.8 (0.1)	99.7 (****)	99.7 (****)	99.9 (****)	99.8 (0.1)	99.8 (****)				
Middle two	66.4 (1.0)	72.8 (0.5)	80.6 (0.6)	70.2 (0.6)	72.4 (1.1)	65.8 (1.3)	71.4 (1.4)	73.5 (1.6)	74.7 (1.4)	+			-
Lower	3.0 (0.5)	3.8 (0.4)	9.9 (0.9)	5.0 (0.4)	6.0 (1.2)	4.3 (1.1)	5.4 (0.9)	6.3 (1.7)	7.5 (1.7)	+			

Standard errors of the estimated percentages appear in parentheses. When no value appears (****), statistical tests involving this value should be interpreted with caution; standard error estimates may not be accurately determined and/or the sampling distribution of the statistic does not match statistical test assumptions (See Procedural Appendix).

* Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1971.

‡ Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1994.

L Indicates that the positive (+) or negative (-) linear trend is significant.

Q Indicates that the positive (+) or negative (-) quadratic trend is significant.

***** Data are unavailable for this assessment year.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table C.3

NAEP 1996 Reading Long-Term Trend Assessment — Age 9
Percentages of students with Reading scale scores at or above 250



	1971	1975	1980	1984	1988	1990	1992	1994	1996	*	‡	L	Q
TOTAL	15.6 (0.6)	14.6 (0.6)	17.7 (0.8)	17.2 (0.6)	17.5 (1.1)	18.4 (1.0)	16.2 (0.8)	16.5 (1.2)	16.7 (0.8)				-
Gender													
Male	12.0 (0.6)	11.5 (0.6)	14.6 (0.9)	15.9 (0.7)	15.8 (1.4)	16.1 (1.2)	14.2 (1.0)	15.2 (1.2)	14.1 (1.3)			+	-
Female	19.2 (0.8)	17.7 (0.8)	20.7 (1.0)	18.4 (0.7)	19.1 (1.2)	20.8 (1.2)	18.2 (1.1)	17.8 (1.5)	19.2 (1.3)				
Race/Ethnicity													
White	18.0 (0.7)	17.4 (0.7)	21.0 (0.9)	20.9 (0.7)	20.3 (1.5)	22.6 (1.2)	19.6 (1.0)	19.7 (1.5)	20.4 (1.1)			+	
Black	1.6 (0.5)	2.0 (0.3)	4.1 (0.6)	4.5 (0.5)	5.6 (1.2)	5.2 (1.5)	4.6 (0.8)	4.4 (1.5)	6.0 (1.1)	+		+	
Hispanic	*****	2.6 (0.5)	5.0 (1.4)	4.3 (0.6)	8.6 (2.3)	5.8 (2.0)	7.2 (2.3)	6.4 (1.6)	7.1 (3.2)				
Other	8.7 (2.1)	14.5 (3.5)	18.7 (4.3)	24.7 (2.6)	29.8 (6.9)	13.1 (3.9)	12.9 (2.6)	15.8 (3.7)	17.1 (3.4)				-
Grade													
Below Modal Grade	2.7 (0.3)	2.7 (0.4)	4.1 (0.5)	5.2 (0.5)	7.4 (0.8)	7.1 (0.9)	6.6 (0.7)	7.0 (1.3)	8.6 (1.1)	+		+	
At Modal Grade	19.6 (0.7)	18.2 (0.7)	22.9 (0.9)	23.2 (0.8)	23.0 (1.8)	26.5 (1.4)	23.3 (1.2)	22.5 (1.4)	20.7 (0.9)			+	-
Above Modal Grade	34.2 (5.4)	22.3 (6.7)	46.7 (10.3)	53.2 (8.7)	*****	*****	*****	*****	*****				
Region													
Northeast	17.9 (0.9)	17.7 (1.0)	21.6 (2.2)	19.8 (1.3)	20.8 (1.9)	23.9 (1.9)	20.2 (2.1)	18.9 (2.1)	21.3 (2.0)				
Southeast	10.2 (1.1)	9.9 (0.8)	15.3 (1.5)	13.8 (0.9)	14.7 (1.4)	12.8 (2.7)	11.7 (1.6)	15.8 (2.8)	13.4 (1.8)				
Central	19.7 (0.9)	17.2 (1.2)	17.9 (1.1)	19.2 (1.3)	20.7 (3.2)	19.3 (2.0)	17.6 (1.3)	18.3 (2.4)	17.4 (2.5)				
West	13.0 (1.4)	12.7 (1.2)	16.4 (1.5)	15.9 (1.0)	14.5 (1.1)	18.1 (2.1)	15.6 (1.9)	13.5 (1.7)	15.1 (1.2)				
Parents' Education Level													
Less Than H.S.	6.1 (0.8)	5.2 (0.7)	6.7 (1.0)	6.6 (0.7)	6.3 (2.1)	9.1 (2.2)	7.8 (2.6)	2.8 (1.8)	7.3 (2.8)				
Graduated H.S.	13.7 (0.8)	14.0 (0.9)	15.0 (1.1)	14.3 (0.9)	16.8 (2.0)	17.2 (1.4)	13.0 (2.0)	13.4 (2.0)	13.8 (2.0)				
Post H.S.	26.1 (1.1)	22.3 (0.9)	25.9 (1.1)	26.3 (0.8)	22.8 (1.6)	24.3 (1.7)	22.2 (1.3)	23.3 (1.8)	21.4 (1.4)	-			
Unknown	9.6 (0.5)	9.7 (0.6)	11.0 (0.8)	11.8 (0.6)	12.3 (1.3)	13.2 (1.5)	11.4 (1.0)	10.5 (1.4)	13.2 (1.2)	+		+	
Type of School													
Public	*****	*****	16.7 (0.9)	16.3 (0.6)	16.6 (0.9)	17.2 (1.0)	15.3 (0.9)	15.7 (1.3)	15.6 (0.9)				
Non-Public	*****	*****	25.6 (1.7)	23.6 (1.7)	23.6 (3.5)	32.4 (4.3)	22.6 (2.2)	23.6 (2.8)	23.5 (4.0)				
Quartiles													
Upper	52.6 (0.9)	50.5 (1.6)	58.1 (1.7)	61.0 (1.0)	63.1 (3.2)	66.0 (1.9)	59.4 (2.2)	59.6 (3.0)	59.9 (1.8)	+		+	-
Middle two	5.0 (0.3)	3.9 (0.3)	6.3 (0.4)	3.6 (0.3)	3.3 (0.6)	3.8 (0.5)	2.7 (0.4)	3.2 (0.6)	3.4 (0.7)			-	
Lower	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.1 (****)	0.0 (****)				

Standard errors of the estimated percentages appear in parentheses. When no value appears (****), statistical tests involving this value should be interpreted with caution; standard error estimates may not be accurately determined and/or the sampling distribution of the statistic does not match statistical test assumptions (See Procedural Appendix).

* Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1971.

‡ Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1994.

L Indicates that the positive (+) or negative (-) linear trend is significant.

Q Indicates that the positive (+) or negative (-) quadratic trend is significant.

***** Data are unavailable for this assessment year.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table C.4

NAEP 1996 Reading Long-Term Trend Assessment — Age 9
Percentages of students with Reading scale scores at or above 300



	1971	1975	1980	1984	1988	1990	1992	1994	1996	*	‡	L	Q
TOTAL	0.9 (0.1)	0.6 (0.1)	0.6 (0.1)	1.0 (0.1)	1.4 (0.3)	1.7 (0.3)	0.7 (0.2)	0.7 (0.3)	0.7 (0.2)				
Gender													
Male	0.6 (0.2)	0.3 (0.1)	0.4 (0.1)	0.8 (0.2)	1.1 (0.4)	1.4 (0.3)	0.5 (0.2)	0.7 (0.4)	0.3 (0.2)				
Female	1.3 (0.2)	0.9 (0.2)	0.8 (0.1)	1.1 (0.1)	1.6 (0.4)	2.0 (0.5)	0.8 (0.3)	0.6 (0.3)	1.1 (0.4)				
Race/Ethnicity													
White	1.1 (0.2)	0.7 (0.1)	0.8 (0.1)	1.2 (0.2)	1.6 (0.3)	2.2 (0.4)	0.9 (0.2)	0.8 (0.3)	1.0 (0.3)				
Black	0.0 (****)	0.0 (****)	0.0 (****)	0.1 (0.1)	0.2(****)	0.3 (****)	0.0 (****)	0.1 (****)	0.0 (****)				
Hispanic	****	0.0 (****)	0.0 (****)	0.1 (****)	0.4(****)	0.2 (****)	0.0 (****)	0.1 (****)	0.1 (****)				
Other	0.5 (****)	0.9 (****)	0.5 (****)	1.9 (0.6)	4.0 (2.7)	0.7 (****)	0.2 (****)	0.7 (****)	0.7 (****)				
Grade													
Below Modal Grade	0.0 (****)	0.1 (****)	0.1 (0.0)	0.1 (0.0)	0.3 (0.2)	0.3 (0.2)	0.0 (****)	0.1 (****)	0.2 (****)				
At Modal Grade	1.2 (0.2)	0.8 (0.1)	0.8 (0.1)	1.4 (0.2)	1.8 (0.4)	2.7 (0.5)	1.1 (0.3)	0.9 (0.4)	1.0 (0.3)				-
Above Modal Grade	1.7 (****)	0.7 (****)	5.0 (****)	8.3 (3.3)	****	****	****	****	****				
Region													
Northeast	1.1 (0.3)	0.9 (0.3)	0.8 (0.2)	1.4 (0.3)	1.7 (0.4)	2.7 (0.7)	0.8 (0.4)	1.0 (0.5)	1.1 (0.6)				
Southeast	0.4 (0.2)	0.3 (0.2)	0.6 (0.3)	0.6 (0.2)	0.8 (0.4)	1.0 (0.5)	0.5 (****)	0.7 (****)	0.6 (0.4)				
Central	1.3 (0.3)	0.7 (0.2)	0.6 (0.2)	1.1 (0.2)	1.9 (1.1)	1.6 (0.5)	0.9 (0.3)	0.7 (0.3)	1.0 (0.5)				
West	0.7 (0.2)	0.4 (0.2)	0.5 (0.2)	0.8 (0.2)	1.1 (0.4)	1.6 (0.4)	0.5 (0.3)	0.4 (0.2)	0.4 (0.2)				
Parents' Education Level													
Less Than H.S.	0.2 (****)	0.1 (****)	0.1 (****)	0.2 (****)	0.0 (****)	0.5 (****)	0.0 (****)	0.0 (****)	0.0(****)				
Graduated H.S.	0.6 (0.2)	0.5 (0.2)	0.4 (0.1)	0.6 (0.2)	0.9 (****)	1.3 (0.7)	0.6 (0.4)	0.6 (0.3)	0.3(****)				
Post H.S.	2.0 (0.3)	1.2 (0.2)	1.1 (0.2)	2.0 (0.3)	2.2 (0.7)	2.7 (0.6)	1.1 (0.3)	1.1 (0.5)	1.3 (0.4)				
Unknown	0.4 (0.1)	0.2 (0.1)	0.3 (0.1)	0.4 (0.1)	0.6 (0.3)	0.8 (0.4)	0.2 (0.1)	0.2 (****)	0.3 (****)				
Type of School													
Public	****	****	0.6 (0.1)	0.9 (0.1)	1.2 (0.3)	1.6 (0.3)	0.6 (0.2)	0.6 (0.3)	0.6(0.2)				-
Non-Public	****	****	1.1 (0.5)	1.4 (0.4)	2.4 (1.1)	2.6 (1.1)	1.0 (0.6)	0.8 (0.5)	1.4(0.7)				
Quartiles													
Upper	3.7 (0.5)	2.4 (0.3)	2.5 (0.4)	3.9 (0.5)	5.4 (1.3)	6.7 (1.2)	2.7 (0.7)	2.6 (1.0)	3.0 (0.9)				
Middle two	0.0 (0.0)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0(****)				
Lower	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0(****)				

Standard errors of the estimated percentages appear in parentheses. When no value appears (****), statistical tests involving this value should be interpreted with caution; standard error estimates may not be accurately determined and/or the sampling distribution of the statistic does not match statistical test assumptions (See Procedural Appendix).

* Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1971.

‡ Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1994.

L Indicates that the positive (+) or negative (-) linear trend is significant.

Q Indicates that the positive (+) or negative (-) quadratic trend is significant.

**** Data are unavailable for this assessment year.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table C.5

NAEP 1996 Reading Long-Term Trend Assessment — Age 9
Percentages of students with Reading scale scores at or above 350



	1971	1975	1980	1984	1988	1990	1992	1994	1996	*	‡	L	Q
TOTAL	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)				
Gender													
Male	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)				
Female	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.1 (****)	0.0 (****)	0.0 (****)	0.0 (****)				
Race/Ethnicity													
White	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)				
Black	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)				
Hispanic	*****	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)				
Other	0.0 (****)	0.0 (****)	0.0 (****)	0.1 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)				
Grade													
Below Modal Grade	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)				
At Modal Grade	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.1 (****)	0.0 (****)	0.0 (****)	0.0 (****)				
Above Modal Grade	0.0 (****)	0.0 (****)	0.0 (****)	0.5 (****)	*****	*****	*****	*****	*****				
Region													
Northeast	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)				
Southeast	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)				
Central	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)				
West	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)				
Parents' Education Level													
Less Than H.S.	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)				
Graduated H.S.	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.1 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)				
Post H.S.	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.1 (****)	0.0 (****)	0.0 (****)	0.0 (****)				
Unknown	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)				
Type of School													
Public	*****	*****	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)				
Non-Public	*****	*****	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)				
Quartiles													
Upper	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.1 (****)	0.1 (****)	0.0 (****)	0.0 (****)	0.0 (****)				
Middle two	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)				
Lower	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)				

Standard errors of the estimated percentages appear in parentheses. When no value appears (****), statistical tests involving this value should be interpreted with caution; standard error estimates may not be accurately determined and/or the sampling distribution of the statistic does not match statistical test assumptions (See Procedural Appendix).

* Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1971.

‡ Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1994.

L Indicates that the positive (+) or negative (-) linear trend is significant.

Q Indicates that the positive (+) or negative (-) quadratic trend is significant.

***** Data are unavailable for this assessment year.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table C.6

NAEP 1996 Reading Long-Term Trend Assessment — Age 13
Percentages of students with Reading scale scores at or above 150



	1971	1975	1980	1984	1988	1990	1992	1994	1996	*	‡	L	Q
TOTAL	99.8 (0.0)	99.7 (0.1)	99.9 (0.1)	99.8 (0.0)	99.9 (0.1)	99.8 (0.1)	99.5 (0.3)	99.3 (0.2)	99.6 (0.2)			-	-
Gender													
Male	99.6 (0.1)	99.6 (0.1)	99.8 (0.1)	99.7 (0.1)	99.7 (0.2)	99.7 (0.2)	99.2 (0.4)	99.1 (0.3)	99.3 (0.4)				
Female	99.9 (0.1)	99.9 (0.1)	99.9 (0.0)	99.9 (0.1)	100.0 (****)	99.9 (****)	99.8 (****)	99.6 (0.2)	99.8 (****)				
Race/Ethnicity													
White	99.9 (0.0)	99.9 (0.0)	100.0 (****)	99.9 (0.0)	99.9 (****)	99.9 (0.1)	99.8 (0.1)	99.6 (0.2)	99.7 (0.2)				
Black	98.6 (0.3)	98.4 (0.3)	99.3 (0.3)	99.4 (0.2)	99.8 (****)	99.4 (****)	98.7 (****)	98.6 (****)	99.4 (****)				
Hispanic	****	99.6 (0.3)	99.7 (****)	99.5 (****)	99.2 (****)	99.1 (0.5)	98.1 (****)	98.7 (****)	98.6 (****)				
Other	99.8 (****)	99.5 (****)	99.9 (****)	99.8 (****)	100.0 (****)	100.0 (****)	99.8 (****)	99.1 (****)	99.2 (****)				
Grade													
Below Modal Grade	99.2 (0.2)	99.0 (0.2)	99.6 (0.2)	99.5 (0.1)	99.7 (0.2)	99.5 (0.3)	98.9 (0.6)	98.8 (0.4)	99.1 (0.3)				-
At Modal Grade	100.0 (0.0)	100.0 (0.0)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	99.9 (****)	99.8 (0.1)	99.8 (****)				
Above Modal Grade	100.0 (****)	100.0 (****)	100.0 (****)	****	****	****	****	****	****				
Region													
Northeast	99.9 (0.1)	99.8 (0.1)	99.9 (0.1)	99.9 (0.1)	99.9 (****)	99.9 (****)	99.4 (****)	99.7 (****)	99.6 (****)				
Southeast	99.4 (0.2)	99.6 (0.1)	99.7 (0.1)	99.8 (0.1)	99.9 (****)	99.6 (****)	99.1 (0.6)	99.5 (****)	99.4 (0.4)				
Central	99.9 (****)	99.8 (0.1)	100.0 (****)	99.9 (0.1)	99.9 (****)	99.9 (****)	99.9 (****)	99.2 (0.6)	99.8 (0.1)				
West	99.8 (****)	99.6 (0.2)	99.9 (0.1)	99.7 (0.1)	99.8 (****)	99.7 (0.2)	99.5 (0.3)	99.1 (0.4)	99.5 (****)				
Parents' Education Level													
Less Than H.S.	99.5 (0.2)	99.4 (0.2)	99.7 (****)	99.5 (0.2)	99.9 (****)	99.5 (****)	99.4 (****)	98.8 (****)	99.5 (****)				
Graduated H.S.	99.9 (0.0)	99.8 (0.1)	99.9 (0.0)	99.8 (0.1)	99.8 (****)	99.9 (****)	99.4 (****)	99.6 (****)	99.7 (0.2)				
Post H.S.	100.0 (****)	99.9 (****)	100.0 (****)	99.9 (0.0)	100.0 (****)	99.9 (****)	99.8 (****)	99.8 (0.1)	99.8 (****)				
Unknown	99.2 (0.2)	99.1 (0.3)	99.3 (0.4)	99.5 (0.2)	99.5 (****)	99.1 (0.6)	98.2 (1.2)	97.6 (1.3)	98.4 (****)				
Type of School													
Public	****	****	99.9 (0.1)	99.8 (0.1)	99.8 (0.1)	99.7 (0.1)	99.4 (0.3)	99.4 (0.2)	99.5 (0.2)				-
Non-Public	****	****	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	98.7 (0.8)	99.9 (****)				
Quartiles													
Upper	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)				
Middle two	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)				
Lower	99.0 (0.2)	98.8 (0.2)	99.5 (0.2)	99.3 (0.2)	99.4 (0.4)	99.1 (0.4)	98.0 (1.0)	97.4 (0.7)	98.2 (0.8)			-	-

Standard errors of the estimated percentages appear in parentheses. When no value appears (****), statistical tests involving this value should be interpreted with caution; standard error estimates may not be accurately determined and/or the sampling distribution of the statistic does not match statistical test assumptions (See Procedural Appendix).

* Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1971.

‡ Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1994.

L Indicates that the positive (+) or negative (-) linear trend is significant.

Q Indicates that the positive (+) or negative (-) quadratic trend is significant.

**** Data are unavailable for this assessment year.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table C.7

NAEP 1996 Reading Long-Term Trend Assessment — Age 13
Percentages of students with Reading scale scores at or above 200



	1971	1975	1980	1984	1988	1990	1992	1994	1996	*	‡	L	Q
TOTAL	93.0 (0.5)	93.2 (0.4)	94.8 (0.4)	93.9 (0.3)	94.9 (0.6)	93.8 (0.6)	92.7 (0.7)	91.7 (0.6)	92.1 (0.7)				-
Gender													
Male	90.7 (0.7)	90.9 (0.5)	93.4 (0.6)	92.2 (0.4)	92.8 (1.0)	91.4 (0.9)	90.4 (1.1)	88.8 (1.1)	89.2 (1.2)				-
Female	95.2 (0.4)	95.5 (0.4)	96.1 (0.4)	95.8 (0.3)	96.9 (0.6)	96.3 (0.6)	95.0 (0.7)	94.9 (0.6)	94.9 (0.6)				-
Race/Ethnicity													
White	96.2 (0.3)	96.4 (0.2)	97.1 (0.2)	96.2 (0.3)	96.0 (0.6)	96.0 (0.6)	95.9 (0.6)	95.0 (0.7)	95.5 (0.5)				-
Black	74.2 (1.7)	76.9 (1.3)	84.1 (1.7)	85.5 (1.0)	91.3 (2.2)	87.7 (2.3)	82.0 (2.7)	80.6 (2.3)	81.5 (3.2)			+	-
Hispanic	*****	81.3 (2.3)	86.8 (2.4)	86.7 (1.5)	87.4 (2.6)	85.8 (2.4)	83.4 (3.5)	82.4 (2.7)	84.9 (3.2)				-
Other	92.3 (2.2)	93.3 (2.0)	93.4 (2.6)	95.1 (1.3)	99.0(****)	93.3 (4.2)	94.8 (2.0)	90.8 (4.9)	90.3 (3.5)				-
Grade													
Below Modal Grade	81.3 (1.1)	82.1 (0.9)	87.3 (1.2)	87.0 (0.6)	90.0 (1.1)	88.3 (1.3)	85.7 (1.6)	86.2 (1.2)	87.0 (1.3)	+		+	-
At Modal Grade	97.4 (0.3)	97.4 (0.2)	97.7 (0.3)	97.7 (0.2)	97.9 (0.5)	97.4 (0.3)	98.0 (0.3)	96.1 (0.5)	95.3 (0.7)	-		-	-
Above Modal Grade	98.6(****)	96.2(****)	98.8(****)	*****	*****	*****	*****	*****	*****				-
Region													
Northeast	95.2 (0.8)	94.0 (0.7)	95.6 (0.8)	95.4 (0.3)	95.1 (1.3)	95.1 (1.1)	92.8 (2.0)	95.9 (0.7)	92.7 (1.8)				-
Southeast	87.2 (1.4)	89.9 (1.0)	92.0 (0.8)	92.8 (0.6)	95.9 (1.1)	92.8 (2.0)	90.1 (1.9)	90.2 (1.3)	88.9 (1.8)				-
Central	95.4 (0.7)	95.8 (0.4)	97.1 (0.6)	95.5 (0.5)	94.6 (1.2)	95.0 (0.8)	94.7 (1.5)	92.3 (1.7)	96.7 (0.7)				-
West	93.4 (0.8)	92.4 (1.0)	94.2 (1.1)	92.6 (0.7)	94.0 (1.2)	92.7 (0.9)	92.9 (0.9)	89.6 (1.6)	91.1 (1.2)				-
Parents' Education Level													
Less Than H.S.	86.6 (1.3)	85.7 (1.0)	87.8 (1.1)	88.0 (0.9)	93.3 (2.0)	88.3 (2.6)	87.8 (2.9)	83.2 (2.9)	85.9 (3.3)				-
Graduated H.S.	94.9 (0.5)	94.6 (0.4)	95.1 (0.5)	93.9 (0.5)	95.0 (0.8)	93.7 (0.9)	91.1 (1.6)	90.9 (1.2)	91.9 (1.0)	-		-	-
Post H.S.	98.0 (0.2)	97.7 (0.3)	98.2 (0.3)	97.1 (0.2)	96.5 (0.6)	96.6 (0.6)	96.1 (0.5)	95.8 (0.6)	95.6 (0.6)	-		-	-
Unknown	82.2 (1.2)	83.3 (1.0)	83.9 (1.5)	84.3 (1.0)	87.5 (2.9)	86.3 (2.9)	81.1 (3.1)	78.3 (3.7)	77.9 (3.5)				-
Type of School													
Public	*****	*****	94.3(0.5)	93.4(0.3)	94.5(0.6)	93.2(0.7)	91.8(0.8)	91.1(0.7)	91.6(0.7)	-		-	-
Non-Public	*****	*****	98.5(0.5)	98.3(0.4)	97.8(1.0)	98.6(0.5)	98.4(0.8)	96.8(1.4)	96.6(1.9)				-
Quartiles													
Upper	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)	100.0(****)				-
Middle two	99.8 (0.1)	100.0(****)	99.8 (0.1)	99.9 (0.1)	99.9(****)	99.9 (0.1)	99.9(****)	99.7 (0.2)	99.8 (0.1)				-
Lower	72.3 (1.2)	72.7 (1.0)	79.5 (1.1)	75.2 (0.7)	79.6 (1.9)	75.6 (1.9)	71.0 (2.3)	67.5 (1.7)	68.9 (2.5)				-

Standard errors of the estimated percentages appear in parentheses. When no value appears (****), statistical tests involving this value should be interpreted with caution; standard error estimates may not be accurately determined and/or the sampling distribution of the statistic does not match statistical test assumptions (See Procedural Appendix).

* Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1971.

‡ Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1994.

L Indicates that the positive (+) or negative (-) linear trend is significant.

Q Indicates that the positive (+) or negative (-) quadratic trend is significant.

***** Data are unavailable for this assessment year.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table C.8

NAEP 1996 Reading Long-Term Trend Assessment — Age 13
Percentages of students with Reading scale scores at or above 250



	1971	1975	1980	1984	1988	1990	1992	1994	1996	*	‡	L	Q
TOTAL	57.8 (1.1)	58.6 (1.0)	60.7 (1.1)	59.0 (0.6)	58.7 (1.3)	58.7 (1.0)	61.6 (1.4)	60.4 (1.2)	59.9 (1.3)				
Gender													
Male	51.6 (1.2)	51.7 (1.1)	55.9 (1.2)	54.0 (0.8)	52.3 (1.9)	52.4 (1.5)	55.5 (2.0)	53.3 (1.9)	53.4 (1.6)				
Female	64.0 (1.1)	65.5 (1.2)	65.4 (1.1)	64.0 (0.7)	65.0 (1.4)	65.0 (1.5)	67.5 (1.4)	67.9 (1.7)	66.2 (1.6)				
Race/Ethnicity													
White	64.2 (0.9)	65.5 (0.9)	67.8 (0.8)	65.3 (0.7)	63.7 (1.5)	64.8 (1.2)	68.5 (1.4)	68.1 (1.3)	68.7 (1.4)	+		+	
Black	21.1 (1.2)	24.8 (1.6)	30.1 (2.0)	34.6 (1.2)	40.2 (2.3)	41.7 (3.5)	38.4 (2.7)	35.6 (3.5)	34.0 (3.9)	+		+	-
Hispanic	*****	32.0 (3.6)	35.4 (2.6)	39.0 (2.1)	38.0 (4.4)	37.2 (2.9)	40.9 (5.1)	33.9 (3.9)	38.1 (3.7)				
Other	51.3 (4.6)	55.8 (4.4)	55.5 (7.5)	63.8 (3.8)	66.9 (6.1)	52.6 (7.9)	68.2 (4.0)	61.9 (5.5)	54.9 (4.2)				
Grade													
Below Modal Grade	27.1 (1.1)	31.2 (1.2)	38.7 (1.7)	38.5 (1.0)	41.0 (1.8)	42.9 (1.7)	44.3 (2.2)	45.8 (2.2)	47.4 (2.0)	+		+	
At Modal Grade	69.4 (1.0)	68.9 (0.9)	69.6 (1.1)	70.1 (0.6)	70.0 (1.5)	68.8 (1.2)	74.3 (1.5)	71.6 (1.0)	67.7 (1.5)				
Above Modal Grade	84.2 (2.8)	79.4 (5.1)	79.0 (6.3)	*****	*****	*****	*****	*****	*****				
Region													
Northeast	64.6 (2.3)	62.1 (2.2)	62.6 (2.1)	63.2 (1.1)	59.2 (2.5)	60.8 (2.6)	65.9 (3.1)	71.2 (2.6)	61.6 (3.1)				
Southeast	46.3 (2.0)	50.8 (1.7)	54.5 (1.9)	57.9 (1.7)	57.7 (3.5)	57.3 (2.4)	55.7 (3.1)	54.6 (2.8)	52.2 (3.7)				-
Central	63.3 (2.3)	64.7 (1.8)	67.2 (2.0)	60.8 (1.4)	57.9 (2.3)	59.4 (2.4)	65.5 (2.9)	62.8 (3.9)	69.3 (2.8)				
West	55.7 (1.7)	55.2 (2.1)	58.2 (2.2)	55.3 (0.8)	59.9 (2.8)	57.5 (2.0)	59.5 (2.2)	55.2 (2.4)	58.4 (2.4)				
Parents' Education Level													
Less Than H.S.	37.9 (1.5)	39.2 (1.6)	37.3 (1.5)	39.7 (1.4)	44.9 (3.5)	40.6 (3.5)	38.7 (3.3)	37.9 (3.1)	38.5 (3.8)				
Graduated H.S.	58.7 (1.2)	57.0 (1.1)	55.3 (1.2)	55.6 (0.9)	54.5 (1.9)	52.6 (1.7)	54.5 (2.0)	53.7 (1.7)	52.6 (2.1)				-
Post H.S.	75.1 (0.9)	74.3 (1.0)	74.9 (0.9)	70.6 (0.8)	67.5 (2.2)	70.4 (1.3)	71.8 (1.7)	71.2 (1.7)	71.1 (1.5)				-
Unknown	32.1 (1.4)	34.4 (1.3)	31.5 (2.4)	36.1 (1.8)	36.5 (4.3)	35.8 (2.7)	37.2 (2.8)	31.8 (3.2)	32.2 (3.1)				
Type of School													
Public	*****	*****	58.9 (1.2)	57.0 (0.7)	57.1 (1.4)	56.7 (1.2)	59.0 (1.5)	58.1 (1.4)	57.9 (1.5)				
Non-Public	*****	*****	74.7 (1.9)	74.2 (1.9)	71.7 (3.5)	72.9 (4.7)	78.0 (2.2)	78.2 (3.3)	75.7 (4.2)				
Quartiles													
Upper	98.6 (0.2)	99.6 (0.1)	97.7 (0.2)	99.0 (0.2)	99.0 (0.6)	99.2 (0.3)	99.4 (0.4)	99.5 (0.3)	99.1 (0.5)				
Middle two	64.4 (0.9)	66.6 (0.9)	68.7 (0.5)	65.7 (0.6)	65.7 (1.8)	65.4 (1.3)	70.7 (1.4)	68.8 (1.6)	68.1 (1.7)			+	
Lower	3.9 (0.4)	1.4 (0.2)	7.9 (0.7)	4.3 (0.4)	4.5 (1.1)	4.6 (0.9)	5.7 (1.1)	4.3 (0.7)	4.6 (1.2)				

Standard errors of the estimated percentages appear in parentheses. When no value appears (*****), statistical tests involving this value should be interpreted with caution; standard error estimates may not be accurately determined and/or the sampling distribution of the statistic does not match statistical test assumptions (See Procedural Appendix).

* Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1971.

‡ Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1994.

L Indicates that the positive (+) or negative (-) linear trend is significant.

Q Indicates that the positive (+) or negative (-) quadratic trend is significant.

***** Data are unavailable for this assessment year.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table C.9

NAEP 1996 Reading Long-Term Trend Assessment — Age 13
Percentages of students with Reading scale scores at or above 300



	1971	1975	1980	1984	1988	1990	1992	1994	1996	*	‡	L	Q
TOTAL	9.8 (0.5)	10.2 (0.5)	11.3 (0.5)	11.0 (0.4)	10.9 (0.8)	11.0 (0.6)	15.3 (0.9)	14.1 (0.8)	13.5 (1.0)	+			
Gender													
Male	7.3 (0.5)	7.0 (0.4)	9.1 (0.7)	9.0 (0.4)	8.6 (0.9)	7.6 (0.8)	12.8 (1.1)	10.1 (0.7)	10.1 (1.0)	+			+
Female	12.3 (0.6)	13.5 (0.7)	13.5 (0.6)	13.2 (0.5)	13.2 (0.9)	14.5 (0.9)	17.7 (1.1)	18.4 (1.1)	16.8 (1.3)	+			+
Race/Ethnicity													
White	11.3 (0.5)	12.1 (0.5)	13.6 (0.6)	13.1 (0.5)	12.4 (0.9)	13.3 (0.9)	18.1 (1.1)	17.2 (1.0)	16.9 (1.3)	+			+
Black	0.8 (0.2)	1.5 (0.3)	1.8 (0.5)	2.8 (0.5)	4.6 (1.2)	4.6 (0.8)	5.7 (1.4)	3.9 (1.2)	3.0 (0.9)				+
Hispanic	*****	2.2 (1.0)	2.3 (0.6)	4.1 (0.7)	4.4 (1.9)	3.9 (1.2)	6.0 (1.9)	4.3 (1.8)	5.4 (1.7)				
Other	8.5 (2.1)	11.2 (2.3)	9.0 (3.2)	12.2 (2.9)	18.4 (5.1)	8.3 (3.2)	20.8 (4.9)	15.9 (4.1)	11.7 (2.3)				
Grade													
Below Modal Grade	1.4 (0.3)	2.1 (0.3)	3.6 (0.5)	3.6 (0.4)	4.1 (0.9)	4.8 (0.5)	6.4 (0.9)	6.9 (0.8)	7.6 (1.0)	+			+
At Modal Grade	12.9 (0.6)	13.2 (0.6)	14.4 (0.7)	15.0 (0.5)	15.0 (1.1)	14.9 (1.0)	20.9 (1.2)	19.8 (1.0)	17.3 (1.5)	+			+
Above Modal Grade	22.4 (3.9)	27.7 (6.2)	19.7 (9.0)	*****	*****	*****	*****	*****	*****				
Region													
Northeast	12.5 (1.1)	11.1 (1.3)	11.8 (1.1)	12.5 (0.4)	12.5 (1.7)	12.1 (1.4)	19.7 (2.4)	20.5 (1.7)	14.1 (2.0)				+
Southeast	6.3 (0.6)	8.1 (0.7)	9.0 (1.1)	11.8 (1.2)	10.8 (1.8)	10.7 (1.4)	13.0 (1.5)	10.9 (2.0)	10.2 (2.0)				+
Central	11.6 (1.0)	12.4 (0.9)	14.3 (0.7)	10.5 (0.6)	9.1 (1.3)	10.0 (1.6)	16.6 (2.3)	14.2 (1.7)	16.2 (1.8)				+
West	8.2 (0.7)	8.9 (0.7)	10.0 (1.0)	9.5 (0.8)	11.4 (1.4)	11.3 (1.2)	12.5 (1.2)	12.1 (1.5)	14.0 (1.6)	+			+
Parents' Education Level													
Less Than H.S.	3.0 (0.5)	3.1 (0.4)	2.6 (0.6)	3.5 (0.5)	4.9 (1.7)	4.0 (1.5)	3.4 (****)	3.2 (1.7)	4.1 (2.1)				
Graduated H.S.	7.7 (0.5)	7.8 (0.5)	6.5 (0.4)	7.5 (0.6)	6.7 (1.2)	7.1 (0.9)	9.1 (1.1)	8.4 (1.3)	7.4 (1.5)				
Post H.S.	17.0 (0.8)	17.2 (0.7)	18.0 (0.8)	17.0 (0.6)	15.5 (1.3)	16.3 (1.3)	21.4 (1.5)	20.0 (0.9)	19.7 (1.6)				+
Unknown	2.7 (0.3)	2.8 (0.5)	2.1 (0.5)	2.9 (0.6)	4.6 (1.2)	3.3 (1.2)	4.5 (1.4)	3.3 (1.5)	2.7 (1.7)				
Type of School													
Public	*****	*****	10.5 (0.5)	10.0 (0.4)	10.1 (0.8)	10.1 (0.7)	13.6 (1.0)	12.6 (0.8)	12.3 (1.1)				+
Non-Public	*****	*****	17.4 (1.5)	19.0 (1.6)	17.3 (2.1)	17.2 (3.0)	26.1 (3.3)	26.6 (3.2)	23.0 (3.7)				+
Quartiles													
Upper	35.3 (0.8)	39.4 (1.1)	38.1 (1.2)	40.7 (1.0)	39.8 (2.4)	40.9 (2.0)	54.0 (2.4)	50.2 (1.9)	48.9 (3.0)	+			+
Middle two	1.9 (0.2)	0.8 (0.1)	3.6 (0.3)	1.7 (0.2)	1.9 (0.4)	1.6 (0.4)	3.6 (0.6)	3.2 (0.5)	2.6 (0.7)				+
Lower	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)				

Standard errors of the estimated percentages appear in parentheses. When no value appears (****), statistical tests involving this value should be interpreted with caution; standard error estimates may not be accurately determined and/or the sampling distribution of the statistic does not match statistical test assumptions (See Procedural Appendix).

* Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1971.

‡ Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1994.

L Indicates that the positive (+) or negative (-) linear trend is significant.

Q Indicates that the positive (+) or negative (-) quadratic trend is significant.

***** Data are unavailable for this assessment year.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table C.10

NAEP 1996 Reading Long-Term Trend Assessment — Age 13
Percentages of students with Reading scale scores at or above 350



	1971	1975	1980	1984	1988	1990	1992	1994	1996	*	‡	L	Q
TOTAL	0.1 (0.0)	0.2 (0.0)	0.2 (0.0)	0.3 (0.1)	0.2 (0.1)	0.4 (0.1)	0.6 (0.3)	0.5 (0.1)	0.5 (0.2)	+			
Gender													
Male	0.1 (0.0)	0.1 (0.1)	0.2 (0.1)	0.2 (0.1)	0.1 (****)	0.2 (0.1)	0.4 (****)	0.3 (0.2)	0.3 (0.2)				
Female	0.2 (0.1)	0.3 (0.1)	0.3 (0.1)	0.4 (0.1)	0.4 (0.2)	0.5 (0.2)	0.8 (0.3)	0.7 (0.2)	0.8 (0.2)				+
Race/Ethnicity													
White	0.2 (0.1)	0.3 (0.1)	0.3 (0.1)	0.4 (0.1)	0.3 (0.1)	0.5 (0.2)	0.8 (0.3)	0.6 (0.2)	0.7 (0.2)	+			+
Black	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.1 (****)	0.1 (****)	0.1 (****)	0.0 (****)	0.0 (****)				
Hispanic	****	0.0 (****)	0.0 (****)	0.1 (****)	0.0 (****)	0.1 (****)	0.0 (****)	0.1 (****)	0.0 (****)				
Other	0.2 (0.0)	0.3 (****)	0.3 (****)	0.8 (****)	1.2 (****)	0.2 (****)	1.7 (****)	0.3 (****)	0.6 (0.4)				
Grade													
Below Modal Grade	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (0.0)	0.0 (****)	0.1 (****)	0.2 (****)	0.1 (****)	0.1 (0.1)	+			
At Modal Grade	0.2 (0.1)	0.3 (0.1)	0.3 (0.1)	0.4 (0.1)	0.3 (0.1)	0.5 (0.2)	0.8 (0.3)	0.7 (0.3)	0.8 (0.3)				+
Above Modal Grade	0.4 (****)	1.9 (1.3)	0.7 (****)	****	****	****	****	****	****				
Region													
Northeast	0.2 (0.1)	0.3 (0.1)	0.2 (0.1)	0.3 (0.1)	0.4 (****)	0.5 (0.3)	1.3 (0.8)	1.1 (0.4)	0.6 (0.3)				
Southeast	0.1 (****)	0.1 (****)	0.2 (0.1)	0.4 (0.1)	0.3 (****)	0.4 (0.2)	0.5 (****)	0.3 (****)	0.4 (****)				
Central	0.2 (0.1)	0.3 (0.1)	0.3 (0.1)	0.2 (0.1)	0.0 (****)	0.3 (0.2)	0.4 (****)	0.3 (****)	0.7 (****)				
West	0.1 (0.0)	0.2 (0.1)	0.2 (0.1)	0.3 (0.1)	0.2 (****)	0.3 (0.2)	0.5 (****)	0.3 (0.2)	0.5 (0.3)				
Parents' Education Level													
Less Than H.S.	0.0 (****)	0.0 (****)	0.0 (****)	0.1 (****)	0.0 (****)	0.0 (****)	0.1 (****)	0.1 (****)	0.0 (****)				
Graduated H.S.	0.1 (0.0)	0.1 (0.1)	0.0 (****)	0.1 (0.1)	0.1 (****)	0.1 (****)	0.1 (****)	0.2 (****)	0.1 (****)				
Post H.S.	0.3 (0.1)	0.5 (0.1)	0.4 (0.1)	0.5 (0.1)	0.4 (0.1)	0.7 (0.2)	1.0 (0.4)	0.7 (0.2)	0.9 (0.3)	+			+
Unknown	0.0 (****)	0.0 (****)	0.1 (****)	0.1 (****)	0.1 (****)	0.1 (****)	0.1 (****)	0.0 (****)	0.0 (****)				
Type of School													
Public	****	****	0.2 (0.0)	0.3 (0.1)	0.2 (0.1)	0.3 (0.1)	0.5 (0.3)	0.3 (0.1)	0.5 (0.1)				+
Non-Public	****	****	0.5 (0.2)	0.4 (0.2)	0.3 (****)	0.8 (0.5)	1.2 (0.8)	1.5 (1.0)	1.2 (****)				
Quartiles													
Upper	0.6 (0.2)	0.9 (0.2)	0.9 (0.2)	1.1 (0.3)	0.9 (0.3)	1.5 (0.4)	2.5 (1.0)	1.8 (0.5)	2.2 (0.6)	+			+
Middle two	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)				
Lower	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)				

Standard errors of the estimated percentages appear in parentheses. When no value appears (****), statistical tests involving this value should be interpreted with caution; standard error estimates may not be accurately determined and/or the sampling distribution of the statistic does not match statistical test assumptions (See Procedural Appendix).

* Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1971.

‡ Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1994.

L Indicates that the positive (+) or negative (-) linear trend is significant.

Q Indicates that the positive (+) or negative (-) quadratic trend is significant.

**** Data are unavailable for this assessment year.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table C.11

NAEP 1996 Reading Long-Term Trend Assessment — Age 17
Percentages of students with Reading scale scores at or above 150



	1971	1975	1980	1984	1988	1990	1992	1994	1996	*	‡	L	Q
TOTAL	99.6 (0.1)	99.7 (0.1)	99.9 (0.1)	100.0 (0.0)	100.0 (****)	99.9 (****)	99.8 (0.1)	99.8 (0.1)	100.0 (****)				
Gender													
Male	99.4 (0.1)	99.5 (0.2)	99.8 (0.1)	99.9 (0.0)	100.0 (****)	99.8 (****)	99.7 (0.2)	99.7 (****)	99.9 (****)				
Female	99.8 (0.1)	99.8 (0.1)	99.9 (****)	99.9 (****)	100.0 (****)	100.0 (****)	99.9 (****)	99.9 (****)	100.0 (****)				
Race/Ethnicity													
White	99.9 (0.0)	99.9 (0.0)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	99.9 (****)	100.0 (****)	100.0 (****)				
Black	97.6 (0.4)	97.7 (0.8)	99.0 (0.3)	99.9 (****)	100.0 (****)	99.6 (****)	99.1 (****)	99.5 (****)	99.8 (****)				
Hispanic	*****	99.3 (0.4)	99.8 (****)	99.8 (****)	99.9 (****)	99.7 (****)	99.8 (****)	99.0 (****)	99.9 (****)				
Other	99.6 (****)	100.0 (****)	99.8 (****)	99.3 (****)	100.0 (****)	99.9 (****)	99.6 (****)	99.8 (****)	100.0 (****)				
Grade													
Below Modal Grade	97.7 (0.4)	98.0 (0.6)	99.1 (0.3)	99.8 (0.1)	100.0 (****)	99.6 (****)	99.3 (0.4)	99.4 (0.4)	99.9 (****)				
At Modal Grade	99.9 (****)	100.0 (****)	100.0 (****)	99.9 (****)	100.0 (****)	100.0 (****)	100.0 (****)	99.9 (****)	100.0 (****)				
Above Modal Grade	100.0 (****)	99.9 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	99.9 (****)	100.0 (****)	100.0 (****)				
Region													
Northeast	99.8 (0.1)	99.7 (0.2)	99.9 (****)	100.0 (****)	100.0 (****)	99.9 (****)	99.7 (****)	99.8 (****)	100.0 (****)				
Southeast	99.1 (0.2)	99.5 (0.1)	99.8 (0.1)	99.8 (****)	100.0 (****)	99.8 (****)	99.7 (****)	99.9 (****)	99.9 (****)				
Central	99.8 (0.1)	99.8 (0.1)	99.9 (****)	100.0 (****)	100.0 (****)	99.9 (****)	99.8 (****)	99.8 (****)	100.0 (****)				
West	99.7 (0.1)	99.5 (0.2)	99.9 (0.1)	99.9 (****)	100.0 (****)	99.9 (****)	99.8 (0.1)	99.7 (****)	100.0 (****)				
Parents' Education Level													
Less Than H.S.	99.2 (0.2)	99.3 (0.2)	99.7 (0.1)	99.9 (****)	100.0 (****)	99.9 (****)	99.8 (****)	99.3 (****)	100.0 (****)				
Graduated H.S.	99.8 (0.1)	99.7 (0.2)	99.8 (0.1)	100.0 (0.0)	100.0 (****)	100.0 (****)	99.9 (****)	99.8 (****)	99.9 (****)				
Post H.S.	100.0 (****)	99.9 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	99.8 (****)	100.0 (****)	100.0 (****)				
Unknown	98.0 (0.5)	97.7 (0.9)	98.9 (0.6)	99.8 (****)	100.0 (****)	98.5 (****)	99.5 (****)	98.8 (****)	100.0 (****)				
Type of School													
Public	*****	*****	99.9 (0.1)	99.9 (0.0)	100.0 (****)	99.9 (****)	99.8 (0.1)	99.8 (0.2)	100.0 (****)				
Non-Public	*****	*****	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	99.9 (****)	100.0 (****)	100.0 (****)				
Quartiles													
Upper	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)				
Middle two	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)				
Lower	98.4 (0.2)	98.6 (0.4)	99.4 (0.2)	99.8 (0.1)	100.0 (****)	99.5 (****)	99.1 (0.5)	99.2 (0.6)	99.9 (****)				

Standard errors of the estimated percentages appear in parentheses. When no value appears (****), statistical tests involving this value should be interpreted with caution; standard error estimates may not be accurately determined and/or the sampling distribution of the statistic does not match statistical test assumptions (See Procedural Appendix).

* Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1971.

‡ Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1994.

L Indicates that the positive (+) or negative (-) linear trend is significant.

Q Indicates that the positive (+) or negative (-) quadratic trend is significant.

***** Data are unavailable for this assessment year.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table C.12

NAEP 1996 Reading Long-Term Trend Assessment — Age 17
Percentages of students with Reading scale scores at or above 200



	1971	1975	1980	1984	1988	1990	1992	1994	1996	*	‡	L	Q
TOTAL	96.0 (0.3)	96.4 (0.3)	97.2 (0.3)	98.3 (0.1)	98.9 (0.3)	98.1 (0.3)	97.1 (0.4)	96.8 (0.5)	97.5 (0.5)	+	+	-	
Gender													
Male	94.7 (0.4)	95.3 (0.4)	96.3 (0.5)	97.6 (0.2)	98.5 (0.5)	97.0 (0.6)	96.3 (0.7)	95.5 (0.9)	96.4 (0.8)			+	-
Female	97.3 (0.3)	97.5 (0.4)	98.1 (0.3)	99.0 (0.1)	99.3 (0.3)	99.2 (0.3)	97.9 (0.4)	98.0 (0.5)	98.6 (0.5)	+		+	-
Race/Ethnicity													
White	97.9 (0.2)	98.6 (0.1)	99.1 (0.1)	99.0 (0.1)	99.3 (0.3)	98.8 (0.2)	98.6 (0.3)	98.1 (0.4)	98.5 (0.4)				-
Black	81.9 (1.5)	82.0 (1.8)	85.6 (1.7)	95.9 (0.5)	98.0 (1.0)	95.7 (1.3)	91.6 (1.6)	93.4 (2.0)	94.9 (1.9)	+		+	-
Hispanic	*****	88.7 (2.4)	93.3 (1.8)	95.6 (0.7)	96.3 (2.4)	95.9 (2.1)	93.4 (2.3)	91.1 (3.4)	94.1 (1.9)				
Other	95.2 (1.7)	96.4 (1.8)	97.9 (****)	96.6 (1.1)	98.5 (****)	98.3 (****)	95.1 (2.0)	97.0 (2.0)	95.7 (1.9)				
Grade													
Below Modal Grade	81.8 (1.1)	83.9 (1.4)	86.5 (1.6)	94.4 (0.5)	97.1 (1.2)	94.2 (1.0)	92.2 (1.0)	92.2 (1.4)	94.4 (1.4)	+		+	-
At Modal Grade	98.2 (0.2)	98.6 (0.2)	98.9 (0.2)	99.3 (0.1)	99.5 (0.2)	99.4 (0.2)	99.0 (0.3)	98.8 (0.3)	99.0 (0.2)	+		+	-
Above Modal Grade	99.0 (0.2)	99.1 (0.3)	99.3 (0.2)	99.6 (0.2)	99.6 (****)	99.6 (****)	98.6 (****)	97.6 (1.4)	98.4 (1.1)				
Region													
Northeast	97.3 (0.4)	97.1 (0.5)	97.5 (0.5)	98.6 (0.3)	99.3 (****)	98.9 (0.5)	98.1 (0.9)	97.1 (0.8)	97.7 (0.9)				
Southeast	92.2 (1.0)	94.2 (0.6)	95.6 (1.0)	98.0 (0.3)	98.6 (0.5)	97.5 (1.0)	95.1 (1.1)	96.8 (1.0)	96.3 (0.9)	+		+	-
Central	97.4 (0.4)	97.7 (0.4)	97.8 (0.6)	98.7 (0.2)	99.5 (****)	98.2 (0.5)	98.7 (0.6)	96.5 (1.7)	98.3 (0.8)				
West	96.1 (0.6)	95.9 (0.9)	97.6 (0.5)	98.0 (0.3)	98.5 (0.6)	97.8 (0.8)	96.6 (0.8)	96.6 (0.9)	97.7 (0.7)				
Parents' Education Level													
Less Than H.S.	91.2 (0.8)	92.3 (0.8)	93.1 (0.8)	96.5 (0.4)	97.6 (1.2)	96.3 (1.8)	94.3 (1.7)	94.3 (2.1)	95.4 (1.6)			+	-
Graduated H.S.	96.7 (0.3)	97.0 (0.6)	97.0 (0.4)	98.1 (0.2)	98.8 (0.4)	98.2 (0.6)	96.8 (0.7)	95.9 (1.1)	95.6 (1.0)				-
Post H.S.	99.1 (0.1)	99.0 (0.2)	99.2 (0.2)	99.3 (0.1)	99.6 (0.2)	99.2 (0.3)	98.1 (0.5)	98.4 (0.4)	99.1 (0.4)				
Unknown	88.0 (1.6)	79.6 (2.3)	85.2 (3.2)	92.8 (1.4)	92.8 (****)	84.6 (4.5)	90.4 (4.8)	82.2 (5.3)	87.0 (5.1)				
Type of School													
Public	*****	*****	97.1 (0.4)	98.1 (0.1)	98.8 (0.3)	98.0 (0.3)	96.8 (0.4)	96.6 (0.5)	97.4 (0.5)				-
Non-Public	*****	*****	99.0 (0.4)	99.6 (0.2)	99.8 (0.1)	99.6 (****)	99.3 (****)	97.9 (****)	98.6 (****)				
Quartiles													
Upper	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)				
Middle two	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)				
Lower	84.1 (0.8)	85.8 (1.1)	89.0 (1.0)	93.2 (0.5)	95.8 (1.2)	92.4 (1.2)	88.3 (1.5)	87.1 (1.8)	90.0 (2.1)	+		+	-

Standard errors of the estimated percentages appear in parentheses. When no value appears (****), statistical tests involving this value should be interpreted with caution; standard error estimates may not be accurately determined and/or the sampling distribution of the statistic does not match statistical test assumptions (See Procedural Appendix).

* Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1971.

‡ Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1994.

L Indicates that the positive (+) or negative (-) linear trend is significant.

Q Indicates that the positive (+) or negative (-) quadratic trend is significant.

***** Data are unavailable for this assessment year.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table C.13

NAEP 1996 Reading Long-Term Trend Assessment — Age 17
Percentages of students with Reading scale scores at or above 250



	1971	1975	1980	1984	1988	1990	1992	1994	1996	*	‡	L	Q
TOTAL	78.6 (0.9)	80.1 (0.7)	80.7 (0.9)	83.1 (0.5)	85.7 (0.8)	84.1 (1.0)	82.5 (0.8)	80.8 (1.0)	81.8 (0.8)	+	+	-	
Gender													
Male	74.4 (1.0)	75.6 (0.8)	77.9 (1.0)	79.6 (0.6)	82.9 (1.4)	79.7 (1.4)	78.4 (1.2)	76.2 (1.5)	77.0 (1.2)			+	-
Female	82.6 (1.0)	84.3 (0.9)	83.6 (1.0)	86.8 (0.6)	88.2 (1.1)	88.6 (1.0)	86.8 (1.1)	85.6 (1.2)	86.8 (1.0)	+		+	-
Race/Ethnicity													
White	83.7 (0.7)	86.2 (0.6)	86.9 (0.6)	88.0 (0.5)	88.7 (0.9)	88.3 (1.1)	88.0 (0.9)	86.2 (1.1)	87.0 (0.8)	+		+	-
Black	40.1 (1.6)	43.0 (1.6)	44.0 (2.0)	65.7 (1.2)	75.8 (2.4)	69.1 (2.8)	61.4 (2.3)	65.7 (4.1)	67.9 (4.0)	+		+	-
Hispanic	*****	52.9 (4.1)	62.2 (3.1)	68.3 (2.1)	71.5 (4.8)	75.2 (4.7)	69.2 (4.0)	63.0 (4.4)	65.0 (4.2)			+	-
Other	72.1 (4.4)	70.4 (4.8)	77.0 (3.6)	77.8 (2.6)	86.5 (6.4)	83.0 (4.5)	79.3 (3.8)	77.2 (6.7)	74.5 (4.7)				
Grade													
Below Modal Grade	40.0 (1.7)	44.3 (1.9)	45.6 (2.4)	60.2 (1.2)	66.5 (2.5)	63.5 (2.5)	62.8 (1.9)	60.5 (2.4)	68.0 (2.0)	+		+	-
At Modal Grade	84.1 (0.8)	85.9 (0.6)	86.0 (0.8)	89.0 (0.4)	91.1 (0.9)	91.2 (0.8)	90.6 (0.8)	89.4 (0.8)	88.4 (0.8)	+		+	-
Above Modal Grade	89.5 (1.0)	90.1 (1.0)	89.9 (1.1)	92.0 (0.8)	94.4 (2.0)	93.4 (1.8)	87.8 (2.5)	87.8 (3.3)	86.2 (2.5)				-
Region													
Northeast	82.4 (2.0)	82.6 (1.5)	80.9 (1.9)	85.5 (1.1)	88.5 (1.9)	86.2 (1.1)	86.1 (2.0)	85.8 (2.3)	84.8 (2.4)				
Southeast	67.8 (2.0)	73.1 (1.3)	76.2 (2.3)	80.1 (1.1)	82.6 (2.1)	80.8 (2.0)	74.4 (2.5)	78.1 (2.7)	76.2 (1.7)	+		+	-
Central	82.8 (1.4)	84.9 (1.2)	82.8 (1.7)	84.6 (1.1)	87.3 (1.7)	86.9 (1.6)	87.1 (1.7)	80.2 (3.1)	85.6 (1.5)				
West	78.2 (1.5)	77.2 (1.7)	81.9 (1.3)	83.4 (0.8)	84.4 (1.6)	82.6 (2.4)	82.8 (1.5)	79.9 (1.7)	80.9 (2.1)				-
Parents' Education Level													
Less Than H.S.	60.8 (1.4)	63.3 (1.4)	63.4 (1.8)	70.0 (1.2)	68.8 (3.4)	71.2 (2.9)	69.1 (3.1)	68.9 (2.5)	67.2 (4.0)			+	-
Graduated H.S.	78.5 (1.1)	79.3 (0.9)	76.5 (1.1)	79.7 (0.8)	82.1 (1.3)	81.3 (1.6)	77.9 (1.6)	74.0 (2.0)	73.1 (1.7)	-			-
Post H.S.	90.0 (0.6)	89.7 (0.6)	89.8 (0.6)	90.6 (0.4)	91.7 (0.9)	89.8 (1.0)	87.9 (1.0)	87.4 (1.1)	88.4 (0.9)				-
Unknown	61.4 (4.3)	42.6 (2.5)	51.2 (3.1)	56.7 (2.3)	54.0 (7.3)	47.8 (5.2)	55.0 (8.5)	44.3 (8.0)	53.2 (7.3)				
Type of School													
Public	*****	*****	79.9 (1.0)	82.1 (0.5)	84.6 (0.8)	83.3 (1.0)	81.3 (0.8)	79.7 (1.2)	81.5 (0.9)				-
Non-Public	*****	*****	90.3 (1.8)	92.3 (1.3)	92.9 (1.9)	95.0 (1.9)	94.1 (2.3)	90.0 (2.9)	85.2 (2.7)				-
Quartiles													
Upper	99.8 (0.1)	100.0 (****)	99.7 (0.1)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)	100.0 (****)				
Middle two	93.7 (0.5)	96.1 (0.4)	93.5 (0.4)	96.9 (0.2)	98.0 (0.4)	97.4 (0.6)	97.1 (0.6)	95.8 (0.8)	95.8 (0.7)	+		+	-
Lower	27.1 (1.0)	28.2 (1.1)	36.0 (1.4)	38.7 (0.8)	46.6 (2.7)	41.7 (3.4)	35.6 (2.1)	31.7 (1.9)	35.5 (2.1)	+		+	-

Standard errors of the estimated percentages appear in parentheses. When no value appears (****), statistical tests involving this value should be interpreted with caution; standard error estimates may not be accurately determined and/or the sampling distribution of the statistic does not match statistical test assumptions (See Procedural Appendix).

* Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1971.

‡ Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1994.

L Indicates that the positive (+) or negative (-) linear trend is significant.

Q Indicates that the positive (+) or negative (-) quadratic trend is significant.

***** Data are unavailable for this assessment year.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table C.14

NAEP 1996 Reading Long-Term Trend Assessment — Age 17
Percentages of students with Reading scale scores at or above 300



	1971	1975	1980	1984	1988	1990	1992	1994	1996	*	‡	L	Q
TOTAL	39.0 (1.0)	38.7 (0.8)	37.8 (1.1)	40.3 (0.8)	40.9 (1.5)	41.4 (1.0)	43.2 (1.1)	41.0 (1.2)	39.4 (1.4)				+
Gender													
Male	33.9 (1.1)	33.7 (1.0)	35.0 (1.3)	35.4 (0.8)	37.1 (2.3)	36.1 (1.5)	38.4 (1.6)	35.6 (1.9)	33.6 (1.9)				
Female	44.0 (1.2)	43.6 (0.9)	40.7 (1.2)	45.0 (0.9)	44.4 (2.0)	46.8 (1.3)	48.5 (1.5)	46.5 (1.5)	45.4 (1.7)				+
Race/Ethnicity													
White	43.2 (0.9)	43.9 (0.8)	43.3 (1.1)	46.3 (0.9)	45.4 (1.6)	47.5 (1.2)	50.1 (1.4)	47.7 (1.4)	46.0 (1.5)				+
Black	7.7 (0.9)	8.1 (0.7)	7.1 (0.8)	16.2 (0.9)	24.9 (3.1)	19.7 (1.8)	16.9 (2.5)	21.5 (3.7)	18.5 (2.2)	+			+
Hispanic	*****	12.6 (2.7)	16.5 (2.1)	21.2 (2.3)	23.3 (3.7)	27.1 (3.3)	27.3 (3.2)	20.1 (3.0)	20.5 (4.8)				+
Other	31.7 (3.4)	28.1 (4.1)	32.3 (3.7)	38.3 (3.3)	40.3 (5.7)	40.4 (6.1)	42.5 (6.4)	39.2 (7.8)	37.1 (6.5)				
Grade													
Below Modal Grade	7.4 (0.8)	7.7 (0.8)	7.8 (1.0)	13.5 (0.9)	15.7 (2.5)	14.8 (1.7)	17.8 (1.7)	17.1 (1.9)	19.6 (2.1)	+			+
At Modal Grade	42.6 (1.0)	43.0 (0.8)	41.6 (1.2)	46.0 (0.8)	47.2 (1.8)	49.4 (1.1)	53.3 (1.5)	49.9 (1.4)	48.1 (1.6)	+			+
Above Modal Grade	53.3 (1.8)	52.4 (1.1)	51.3 (2.2)	55.5 (1.5)	57.1 (4.6)	61.9 (3.6)	53.5 (3.8)	60.2 (5.2)	53.7 (4.2)				
Region													
Northeast	44.3 (2.6)	41.6 (1.4)	38.0 (2.6)	42.9 (2.3)	46.9 (3.1)	46.6 (2.2)	51.0 (3.1)	49.0 (3.7)	43.3 (3.3)				
Southeast	28.2 (1.6)	31.8 (1.4)	33.8 (1.8)	36.4 (1.6)	36.4 (2.5)	36.9 (2.7)	33.5 (2.3)	35.7 (2.7)	31.8 (2.6)				-
Central	43.2 (1.9)	43.6 (1.5)	39.0 (2.4)	41.4 (1.6)	40.2 (4.2)	44.5 (2.4)	45.4 (2.7)	38.7 (3.0)	44.0 (2.4)				
West	37.2 (1.5)	35.4 (1.5)	39.6 (2.2)	40.4 (1.2)	40.3 (2.4)	38.0 (2.8)	44.0 (2.5)	41.7 (2.7)	38.7 (2.8)				
Parents' Education Level													
Less Than H.S.	19.5 (1.0)	19.0 (1.2)	17.0 (1.3)	21.1 (1.2)	17.6 (3.9)	20.4 (2.6)	26.0 (3.4)	21.7 (3.9)	21.7 (3.4)				
Graduated H.S.	35.9 (1.1)	33.2 (0.8)	29.3 (0.9)	31.6 (0.9)	30.9 (1.7)	32.3 (1.6)	33.8 (2.2)	28.9 (2.1)	25.9 (2.0)	-			-
Post H.S.	53.4 (1.1)	52.1 (1.0)	50.2 (1.1)	53.0 (1.0)	50.8 (1.9)	51.1 (1.2)	51.5 (1.4)	50.4 (1.3)	48.4 (1.8)				
Unknown	22.6 (3.3)	9.2 (1.7)	12.4 (2.1)	13.6 (2.0)	14.5 (5.7)	11.5 (3.7)	14.0 (3.6)	9.9 (3.2)	12.9 (4.9)				
Type of School													
Public	*****	*****	36.8 (1.2)	38.7 (0.7)	39.5 (1.6)	39.8 (1.0)	41.3 (1.0)	39.1 (1.4)	38.8 (1.5)				
Non-Public	*****	*****	49.9 (3.3)	54.4 (2.3)	50.4 (5.7)	63.0 (5.9)	62.6 (5.3)	57.3 (5.2)	46.0 (5.5)				
Quartiles													
Upper	89.0 (0.8)	93.1 (0.5)	85.2 (0.7)	90.9 (0.5)	91.9 (1.1)	93.6 (1.4)	93.5 (1.1)	93.9 (1.1)	92.4 (1.3)				+
Middle two	33.3 (0.8)	30.8 (1.0)	32.5 (0.8)	34.0 (0.8)	35.6 (2.1)	35.8 (1.3)	39.5 (1.5)	34.8 (1.2)	32.3 (2.3)				+
Lower	0.5 (0.2)	0.1 (0.1)	1.1 (0.3)	0.5 (0.1)	0.5 (****)	0.6 (****)	0.5 (****)	0.5 (0.3)	0.5 (0.3)				

Standard errors of the estimated percentages appear in parentheses. When no value appears (****), statistical tests involving this value should be interpreted with caution; standard error estimates may not be accurately determined and/or the sampling distribution of the statistic does not match statistical test assumptions (See Procedural Appendix).

* Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1971.

‡ Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1994.

L Indicates that the positive (+) or negative (-) linear trend is significant.

Q Indicates that the positive (+) or negative (-) quadratic trend is significant.

***** Data are unavailable for this assessment year.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table C.15

NAEP 1996 Reading Long-Term Trend Assessment — Age 17
Percentages of students with Reading scale scores at or above 350



	1971	1975	1980	1984	1988	1990	1992	1994	1996	*	‡	L	Q
TOTAL	6.8 (0.4)	6.2 (0.3)	5.3 (0.4)	5.7 (0.3)	4.6 (0.6)	7.0 (0.5)	6.8 (0.6)	7.3 (0.7)	6.7 (0.8)				+
Gender													
Male	5.2 (0.4)	5.1 (0.5)	4.5 (0.4)	4.8 (0.4)	3.5 (0.9)	5.6 (0.5)	5.3 (0.7)	5.4 (0.9)	4.7 (1.0)				+
Female	8.4 (0.5)	7.3 (0.4)	6.0 (0.6)	6.7 (0.4)	5.5 (0.8)	8.5 (0.7)	8.4 (0.7)	9.2 (0.9)	8.8 (1.2)				
Race/Ethnicity													
White	7.7 (0.4)	7.2 (0.4)	6.2 (0.4)	6.9 (0.4)	5.5 (0.7)	8.7 (0.6)	8.3 (0.8)	8.8 (0.9)	8.4 (1.1)				+
Black	0.4 (0.1)	0.4 (0.3)	0.2 (****)	0.9 (0.3)	1.4 (0.7)	1.5 (1.0)	1.6 (0.9)	2.3 (1.2)	1.8 (1.0)				
Hispanic	****	1.2 (0.6)	1.3 (0.4)	2.0 (0.4)	1.3 (****)	2.4 (1.4)	2.3 (0.8)	1.9 (1.1)	1.6 (****)				
Other	4.0 (1.9)	3.8 (****)	3.8 (2.5)	7.0 (1.2)	4.2 (****)	6.2 (2.6)	7.1 (2.3)	9.5 (5.4)	5.1 (2.7)				
Grade													
Below Modal Grade	0.5 (0.2)	0.3 (0.1)	0.3 (0.2)	0.6 (0.2)	1.4 (0.7)	1.0 (0.2)	0.8 (0.4)	1.2 (0.7)	1.9 (0.8)				+
At Modal Grade	7.1 (0.4)	6.7 (0.4)	5.7 (0.4)	6.6 (0.3)	5.2 (0.7)	8.4 (0.6)	9.0 (0.7)	9.1 (1.0)	8.5 (1.2)				+
Above Modal Grade	12.1 (1.3)	11.0 (1.0)	9.5 (1.7)	10.1 (1.0)	7.3 (2.9)	14.7 (2.6)	10.9 (3.1)	15.7 (3.8)	11.9 (4.3)				+
Region													
Northeast	8.7 (1.1)	7.6 (1.0)	5.6 (0.7)	6.1 (0.6)	5.6 (1.6)	9.5 (1.2)	9.5 (1.8)	11.4 (2.5)	8.4 (2.3)				
Southeast	3.9 (0.6)	4.5 (0.5)	4.4 (0.9)	5.3 (0.5)	4.1 (1.3)	5.8 (1.1)	4.3 (1.2)	5.5 (1.5)	4.7 (1.8)				
Central	7.8 (0.8)	7.1 (0.5)	5.0 (0.6)	5.6 (0.5)	4.4 (0.7)	7.4 (1.2)	6.2 (0.7)	6.0 (1.0)	8.1 (1.3)				+
West	6.0 (0.6)	5.1 (0.5)	5.8 (0.7)	5.8 (0.7)	4.2 (0.8)	5.7 (1.0)	7.3 (1.0)	6.7 (1.1)	5.8 (1.5)				
Parents' Education Level													
Less Than H.S.	1.9 (0.3)	1.6 (0.3)	1.0 (0.3)	1.4 (0.3)	1.0 (****)	1.8 (0.8)	2.4 (1.4)	1.3 (0.8)	1.7 (****)				
Graduated H.S.	4.9 (0.4)	3.8 (0.4)	2.6 (0.2)	2.9 (0.3)	1.8 (0.7)	3.9 (0.7)	3.2 (0.5)	2.8 (0.7)	2.5 (0.6)	-		-	
Post H.S.	11.3 (0.6)	10.1 (0.6)	8.3 (0.6)	8.9 (0.5)	6.7 (1.0)	9.8 (0.7)	9.4 (0.8)	10.3 (1.0)	9.3 (1.2)				+
Unknown	2.6 (0.4)	0.3 (0.0)	1.1 (****)	0.6 (0.3)	0.2 (****)	0.3 (****)	0.8 (****)	0.4 (****)	0.6 (****)				
Type of School													
Public	****	****	5.1 (0.4)	5.3 (0.3)	4.4 (0.6)	6.5 (0.5)	6.2 (0.6)	6.3 (0.5)	6.5 (0.9)				+
Non-Public	****	****	7.7 (1.3)	9.2 (1.0)	5.6 (2.4)	13.7 (2.7)	13.1 (2.9)	15.4 (3.7)	9.0 (4.0)				
Quartiles													
Upper	24.9 (0.9)	24.5 (0.9)	18.7 (1.0)	21.7 (1.1)	17.6 (2.1)	26.9 (1.6)	26.1 (2.0)	27.9 (2.3)	25.4 (2.6)				+
Middle two	1.2 (0.2)	0.2 (0.1)	1.2 (0.2)	0.5 (0.1)	0.3 (0.2)	0.6 (0.3)	0.6 (0.3)	0.6 (0.3)	0.6 (0.4)				
Lower	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)	0.0 (****)				

Standard errors of the estimated percentages appear in parentheses. When no value appears (****), statistical tests involving this value should be interpreted with caution; standard error estimates may not be accurately determined and/or the sampling distribution of the statistic does not match statistical test assumptions (See Procedural Appendix).

* Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1971.

‡ Indicates that the percentage in 1996 is significantly larger (+) or smaller (-) than that in 1994.

L Indicates that the positive (+) or negative (-) linear trend is significant.

Q Indicates that the positive (+) or negative (-) quadratic trend is significant.

**** Data are unavailable for this assessment year.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table C.16

NAEP 1996 Long-Term Trend Reading Results — Age 9
Scale Score Means, Standard Deviations, and Percentiles



	1971	1975	1980	1984	1988	1990	1992	1994	1996
TOTAL									
Mean	207.6 (1.0)	210.0 (0.7)	215.0 (1.0)	210.9 (0.7)	211.8 (1.1)	209.2 (1.2)	210.5 (0.9)	211.0 (1.2)	212.5 (1.0)
Standard Deviation	42.1 (0.4)	38.6 (0.3)	37.9 (0.4)	41.1 (0.4)	41.2 (1.0)	44.7 (0.8)	40.3 (0.6)	40.5 (0.8)	39.0 (0.8)
<i>Percentiles</i>									
5	134.8 (2.0)	143.2 (1.3)	148.5 (1.6)	140.5 (1.2)	141.9 (3.6)	134.8 (3.2)	140.7 (1.6)	140.1 (2.6)	144.6 (2.4)
10	151.6 (1.6)	159.2 (1.1)	165.1 (1.4)	156.7 (1.2)	156.7 (2.1)	150.1 (1.9)	156.0 (1.5)	155.6 (2.5)	159.7 (2.1)
25	180.0 (1.3)	185.2 (0.8)	191.1 (1.2)	183.7 (1.2)	184.3 (1.8)	178.7 (1.8)	183.1 (1.5)	184.1 (1.9)	186.1 (1.3)
50	209.3 (1.0)	211.9 (0.8)	217.2 (0.9)	212.6 (1.0)	213.7 (1.4)	210.3 (1.5)	213.6 (0.9)	214.8 (1.1)	215.4 (1.2)
75	236.7 (1.0)	236.5 (0.9)	241.3 (1.0)	239.6 (0.9)	240.1 (1.3)	240.3 (1.8)	239.3 (1.2)	240.0 (1.5)	240.3 (1.0)
90	260.5 (0.8)	258.1 (0.8)	261.7 (1.1)	262.8 (0.9)	263.0 (1.7)	265.7 (1.8)	259.9 (1.2)	260.1 (1.6)	259.7 (1.0)
95	274.1 (0.9)	270.6 (1.1)	273.3 (1.6)	276.5 (1.4)	277.5 (2.0)	280.4 (1.3)	272.1 (1.2)	271.7 (1.5)	271.8 (1.3)
Male Students									
Mean	201.2 (1.1)	204.3 (0.8)	210.0 (1.1)	207.5 (1.0)	207.5 (1.4)	204.0 (1.7)	205.9 (1.3)	207.3 (1.3)	207.0 (1.4)
Standard Deviation	42.1 (0.5)	39.0 (0.5)	38.7 (0.5)	42.3 (0.5)	42.7 (1.2)	45.1 (1.0)	41.3 (0.6)	41.9 (1.0)	39.4 (1.1)
<i>Percentiles</i>									
5	128.9 (2.0)	136.6 (1.1)	141.9 (2.3)	136.0 (1.1)	136.5 (2.9)	129.6 (5.8)	136.6 (2.0)	136.0 (1.7)	139.9 (2.6)
10	145.0 (1.7)	152.6 (1.3)	158.7 (1.4)	151.1 (1.5)	151.1 (2.4)	145.1 (1.9)	150.5 (2.1)	150.5 (2.2)	154.3 (2.4)
25	173.6 (1.4)	178.9 (1.0)	185.3 (1.4)	178.5 (1.1)	178.4 (1.8)	172.2 (2.8)	176.8 (1.7)	178.9 (3.2)	179.6 (2.5)
50	202.8 (1.2)	206.1 (0.9)	212.5 (1.2)	209.1 (1.3)	209.7 (1.8)	204.4 (2.2)	208.3 (1.6)	210.6 (1.6)	209.3 (2.4)
75	230.4 (1.1)	231.4 (1.0)	237.1 (1.1)	237.7 (1.2)	237.1 (1.9)	236.1 (1.9)	235.5 (1.6)	237.3 (2.0)	236.1 (1.5)
90	254.6 (1.2)	253.0 (1.1)	257.5 (0.8)	261.1 (1.1)	260.3 (2.0)	261.7 (2.6)	257.3 (1.0)	259.6 (1.9)	255.7 (1.5)
95	268.4 (1.5)	265.4 (1.4)	268.7 (1.1)	275.1 (1.1)	275.1 (2.3)	276.1 (5.6)	269.9 (2.8)	271.4 (4.1)	267.1 (3.0)
Female Students									
Mean	213.9 (1.0)	215.8 (0.8)	220.1 (1.1)	214.4 (0.9)	216.3 (1.3)	214.5 (1.2)	215.4 (0.9)	214.7 (1.4)	217.8 (1.1)
Standard Deviation	41.0 (0.6)	37.3 (0.4)	36.5 (0.5)	39.6 (0.5)	39.2 (1.2)	43.6 (1.3)	38.8 (0.9)	38.7 (1.1)	37.8 (0.8)
<i>Percentiles</i>									
5	142.9 (2.1)	151.3 (1.4)	157.1 (1.8)	146.4 (2.1)	149.3 (5.5)	140.6 (3.9)	147.3 (3.3)	145.9 (3.0)	151.3 (2.2)
10	159.5 (1.3)	167.1 (1.1)	172.5 (1.7)	162.9 (1.6)	164.3 (4.6)	156.8 (3.2)	163.8 (2.3)	162.2 (2.7)	166.9 (2.3)
25	186.7 (1.2)	192.0 (1.0)	197.2 (1.2)	188.7 (1.0)	190.6 (2.4)	185.7 (1.7)	190.0 (1.4)	189.4 (2.1)	193.1 (2.4)
50	215.6 (1.1)	217.2 (0.9)	221.7 (1.1)	215.7 (1.0)	217.5 (2.0)	215.9 (1.3)	218.5 (1.3)	218.6 (1.7)	220.8 (2.0)
75	242.4 (1.1)	241.1 (1.0)	245.2 (1.1)	241.6 (1.0)	242.6 (1.1)	244.4 (1.9)	242.5 (1.3)	241.9 (1.7)	244.0 (1.7)
90	265.0 (0.9)	262.3 (1.0)	265.5 (1.7)	264.4 (1.3)	265.3 (2.2)	269.4 (1.9)	262.3 (1.9)	260.6 (1.9)	263.3 (1.4)
95	278.6 (1.5)	274.8 (1.1)	277.0 (1.5)	277.8 (2.0)	279.1 (3.4)	284.1 (2.1)	273.7 (2.0)	272.0 (1.3)	275.5 (3.1)

The standard errors of the estimated scale scores appear in parentheses.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table C.16
(continued)

NAEP 1996 Long-Term Trend Reading Results — Age 9
Scale Score Means, Standard Deviations, and Percentiles



	1971	1975	1980	1984	1988	1990	1992	1994	1996
White Students									
Mean	214.0 (0.9)	216.6 (0.7)	221.3 (0.8)	218.2 (0.9)	217.7 (1.4)	217.0 (1.3)	217.9 (1.0)	218.0 (1.3)	219.6 (1.2)
Standard Deviation	39.4 (0.4)	36.1 (0.3)	35.2 (0.3)	38.8 (0.3)	39.3 (1.0)	42.9 (1.0)	37.5 (0.7)	37.4 (0.9)	36.5 (0.9)
<i>Percentiles</i>									
5	146.3 (2.4)	154.4 (1.2)	160.7 (1.5)	152.0 (1.3)	150.2 (3.4)	144.2 (3.2)	152.8 (1.6)	152.4 (2.0)	156.0 (2.8)
10	162.4 (1.3)	169.8 (1.1)	175.3 (1.0)	167.1 (1.0)	165.0 (3.9)	160.0 (1.5)	167.0 (1.8)	167.5 (2.6)	170.5 (2.8)
25	188.1 (1.2)	193.3 (0.7)	199.0 (0.9)	192.4 (1.0)	191.8 (2.4)	188.0 (2.8)	192.8 (1.3)	193.7 (1.8)	195.5 (1.6)
50	215.2 (0.9)	217.9 (0.7)	222.8 (0.8)	219.5 (1.0)	219.1 (1.2)	218.4 (2.1)	220.6 (1.3)	221.1 (1.4)	222.3 (1.7)
75	241.0 (0.9)	241.0 (0.9)	245.7 (0.9)	244.9 (0.9)	244.3 (1.8)	246.7 (2.3)	244.2 (1.2)	244.0 (1.5)	244.9 (1.6)
90	263.6 (0.8)	261.6 (1.0)	265.1 (1.1)	267.2 (1.3)	266.7 (2.2)	270.9 (2.1)	264.0 (1.0)	263.3 (1.5)	263.7 (1.3)
95	276.7 (0.9)	273.8 (1.3)	276.4 (1.2)	280.2 (1.3)	280.6 (2.6)	285.3 (2.6)	275.9 (3.1)	274.9 (1.8)	276.1 (1.2)
Black Students									
Mean	170.1 (1.7)	181.2 (1.2)	189.3 (1.8)	185.7 (1.4)	188.5 (2.4)	181.8 (2.9)	184.5 (2.2)	185.4 (2.3)	190.9 (2.6)
Standard Deviation	38.3 (0.7)	35.8 (0.6)	37.6 (1.0)	38.9 (0.9)	39.4 (1.6)	41.7 (1.7)	39.8 (1.3)	40.6 (2.4)	38.6 (1.4)
<i>Percentiles</i>									
5	106.7 (2.5)	118.8 (2.3)	123.1 (4.1)	120.8 (2.2)	124.7 (6.3)	115.0 (4.7)	119.3 (6.1)	119.1 (3.7)	126.6 (4.4)
10	120.0 (2.0)	133.7 (2.8)	139.4 (4.0)	135.1 (2.8)	138.3 (3.4)	128.9 (3.9)	132.4 (3.6)	132.7 (4.7)	139.2 (7.1)
25	143.4 (2.0)	157.5 (2.3)	165.3 (1.9)	159.3 (1.8)	161.8 (3.0)	152.5 (3.2)	156.3 (4.4)	155.3 (4.1)	162.8 (4.3)
50	171.0 (2.1)	182.8 (1.2)	191.7 (2.1)	186.5 (1.5)	188.3 (4.0)	181.8 (3.1)	185.1 (2.5)	186.4 (4.7)	191.0 (3.5)
75	196.3 (1.8)	206.5 (1.2)	215.6 (1.9)	212.5 (1.6)	216.5 (2.9)	210.5 (2.4)	213.5 (2.6)	216.2 (5.1)	219.5 (4.1)
90	218.9 (1.6)	226.3 (1.5)	236.3 (1.9)	235.3 (2.5)	238.2 (3.8)	236.3 (2.7)	235.5 (2.9)	237.2 (2.6)	241.3 (3.4)
95	232.4 (1.7)	237.2 (2.0)	247.1 (1.8)	248.4 (2.0)	252.2 (4.6)	250.7 (6.9)	248.7 (2.5)	248.0 (4.7)	253.5 (7.2)
Hispanic Students									
Mean	0.0 (0.0)	182.7 (2.2)	190.2 (2.3)	187.1 (3.1)	193.7 (3.5)	189.4 (2.3)	191.7 (3.1)	185.9 (3.9)	194.8 (3.4)
Standard Deviation	0.0 (0.0)	36.8 (1.3)	38.2 (1.2)	39.2 (1.5)	41.5 (2.8)	39.7 (1.6)	40.3 (1.8)	41.4 (2.0)	39.2 (1.8)
<i>Percentiles</i>									
5	0.0 (0.0)	120.3 (4.9)	123.4 (3.1)	120.3 (5.1)	121.8 (11.3)	125.4 (8.9)	124.8 (6.2)	118.9 (5.5)	127.4 (6.5)
10	0.0 (0.0)	133.4 (5.2)	138.4 (4.1)	134.7 (7.2)	140.3 (7.7)	139.0 (4.3)	138.7 (5.6)	133.7 (13.5)	141.7 (5.1)
25	0.0 (0.0)	157.4 (3.0)	164.3 (3.9)	160.7 (2.4)	164.9 (5.1)	160.8 (1.9)	162.5 (6.0)	157.0 (4.4)	167.9 (7.5)
50	0.0 (0.0)	184.2 (2.9)	192.0 (3.3)	189.2 (2.3)	196.0 (3.4)	189.3 (3.5)	192.7 (4.6)	184.1 (6.9)	197.8 (4.9)
75	0.0 (0.0)	209.4 (3.4)	217.6 (3.0)	215.4 (2.3)	222.0 (6.0)	218.9 (4.0)	222.0 (2.3)	215.7 (5.3)	222.7 (4.6)
90	0.0 (0.0)	228.6 (3.6)	237.8 (2.7)	236.1 (2.2)	246.7 (8.0)	239.3 (5.7)	244.7 (5.6)	242.8 (2.8)	244.3 (8.5)
95	0.0 (0.0)	240.3 (2.6)	249.9 (4.3)	247.1 (2.1)	258.6 (11.4)	253.2 (6.7)	255.4 (10.4)	255.0 (6.9)	254.9 (6.5)

The standard errors of the estimated scale scores appear in parentheses.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table C.17

NAEP 1996 Long-Term Trend Reading Results — Age 13
Scale Score Means, Standard Deviations, and Percentiles



	1971	1975	1980	1984	1988	1990	1992	1994	1996
TOTAL									
Mean	255.2 (0.9)	255.9 (0.8)	258.5 (0.9)	257.1 (0.6)	257.5 (1.0)	256.8 (0.8)	259.8 (1.2)	257.9 (0.9)	257.9 (1.0)
Standard Deviation	35.7 (0.4)	35.8 (0.3)	34.9 (0.4)	35.5 (0.3)	34.7 (0.5)	36.0 (0.6)	39.4 (0.8)	39.8 (0.7)	39.1 (0.9)
<i>Percentiles</i>									
5	192.8 (1.8)	193.5 (1.1)	199.1 (1.9)	196.7 (1.1)	199.5 (1.7)	195.7 (1.9)	190.9 (2.8)	188.2 (4.9)	189.1 (2.3)
10	207.8 (1.4)	208.7 (1.0)	212.8 (1.5)	210.2 (0.9)	212.9 (1.2)	209.8 (1.8)	207.9 (1.9)	205.1 (1.7)	206.4 (2.1)
25	232.3 (1.2)	232.9 (1.0)	235.3 (1.1)	233.9 (0.8)	234.2 (1.2)	233.2 (1.0)	234.7 (1.8)	232.5 (1.2)	233.1 (1.5)
50	257.0 (1.0)	257.7 (0.9)	259.6 (0.8)	258.2 (0.8)	257.9 (1.1)	257.3 (0.9)	261.6 (1.6)	260.1 (1.1)	260.1 (0.9)
75	279.9 (0.8)	280.6 (0.8)	282.8 (0.8)	281.6 (0.6)	281.4 (1.4)	281.5 (0.8)	287.0 (1.4)	285.2 (1.1)	284.8 (0.8)
90	299.6 (0.9)	300.5 (1.0)	302.3 (0.8)	301.7 (0.8)	301.6 (1.0)	302.0 (1.0)	309.2 (1.8)	307.4 (1.4)	306.1 (1.4)
95	310.8 (0.9)	311.8 (1.0)	313.9 (0.8)	313.7 (1.0)	313.7 (1.3)	314.4 (1.3)	321.9 (2.6)	320.3 (1.4)	319.3 (1.8)
Male Students									
Mean	249.6 (1.0)	249.6 (0.8)	254.3 (1.1)	252.7 (0.7)	251.8 (1.3)	250.5 (1.1)	254.1 (1.7)	250.6 (1.2)	251.1 (1.2)
Standard Deviation	35.9 (0.5)	35.7 (0.4)	35.0 (0.5)	35.8 (0.4)	35.3 (0.7)	36.0 (0.7)	40.4 (1.1)	40.0 (0.8)	39.4 (1.2)
<i>Percentiles</i>									
5	186.7 (1.6)	187.2 (1.1)	194.9 (1.9)	191.9 (1.0)	192.6 (2.5)	189.7 (2.2)	184.9 (3.7)	181.0 (4.4)	181.7 (4.4)
10	201.6 (1.6)	202.3 (1.5)	208.5 (1.5)	205.5 (1.2)	206.7 (1.8)	202.8 (1.4)	201.0 (2.8)	197.1 (2.9)	198.0 (2.7)
25	226.3 (1.2)	226.8 (1.1)	230.8 (1.2)	228.9 (1.1)	227.7 (2.1)	226.9 (1.9)	227.4 (2.1)	224.9 (1.6)	226.2 (2.6)
50	251.4 (0.8)	251.4 (0.9)	255.4 (1.1)	253.9 (0.9)	252.1 (2.1)	251.9 (1.3)	255.6 (2.4)	253.1 (1.8)	253.3 (1.4)
75	274.5 (0.8)	274.1 (0.8)	278.6 (1.2)	277.5 (1.0)	276.5 (2.0)	275.3 (1.2)	282.5 (1.5)	278.4 (1.6)	278.4 (1.4)
90	294.2 (1.0)	293.5 (1.0)	298.5 (1.2)	297.8 (1.0)	297.2 (1.5)	295.3 (1.2)	305.0 (3.4)	300.4 (2.1)	300.1 (1.6)
95	305.9 (1.3)	305.6 (1.7)	309.9 (0.9)	309.4 (1.2)	309.4 (2.8)	307.4 (3.2)	317.8 (3.1)	313.5 (1.5)	312.5 (2.3)
Female Students									
Mean	260.8 (0.9)	262.3 (0.9)	262.6 (0.9)	261.8 (0.7)	263.0 (1.0)	263.1 (1.1)	265.3 (1.2)	265.7 (1.2)	264.3 (1.2)
Standard Deviation	34.5 (0.4)	34.8 (0.4)	34.2 (0.4)	34.5 (0.3)	33.1 (0.6)	34.8 (0.7)	37.5 (0.8)	38.0 (0.8)	37.6 (0.8)
<i>Percentiles</i>									
5	200.9 (1.5)	202.1 (1.7)	204.2 (2.0)	203.0 (1.3)	207.3 (3.9)	205.3 (3.1)	199.3 (4.1)	199.6 (2.6)	199.4 (1.9)
10	215.2 (1.4)	215.9 (1.4)	218.0 (2.0)	216.8 (1.1)	221.0 (1.6)	217.9 (2.0)	216.8 (2.9)	216.0 (3.7)	215.7 (2.2)
25	238.5 (0.8)	239.8 (1.1)	240.0 (1.1)	239.1 (0.8)	240.0 (1.6)	240.0 (1.9)	241.5 (1.2)	242.0 (1.5)	240.2 (1.5)
50	262.4 (1.1)	264.2 (1.0)	263.4 (0.9)	262.7 (0.8)	263.0 (1.4)	263.0 (1.6)	266.6 (1.9)	267.1 (1.1)	265.9 (1.8)
75	285.0 (1.0)	286.6 (1.2)	286.3 (1.0)	285.4 (0.7)	285.8 (1.0)	286.6 (1.1)	290.8 (1.1)	291.9 (1.3)	290.3 (2.0)
90	303.8 (1.3)	305.4 (1.0)	305.6 (1.0)	305.5 (0.8)	305.2 (1.2)	308.1 (1.5)	312.8 (1.5)	313.0 (2.9)	311.2 (2.2)
95	314.6 (0.9)	316.1 (1.1)	317.3 (1.6)	317.5 (1.6)	317.7 (3.2)	319.4 (2.5)	324.5 (2.4)	325.1 (2.4)	324.1 (2.9)

The standard errors of the estimated scale scores appear in parentheses.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table C.17
(continued)

NAEP 1996 Long-Term Trend Reading Results — Age 13
Scale Score Means, Standard Deviations, and Percentiles



	1971	1975	1980	1984	1988	1990	1992	1994	1996
White Students									
Mean	260.9 (0.7)	262.1 (0.7)	264.4 (0.7)	262.5 (0.6)	261.3 (1.1)	262.3 (0.9)	266.4 (1.2)	265.1 (1.1)	265.9 (1.0)
Standard Deviation	32.9 (0.3)	32.9 (0.3)	32.7 (0.3)	33.8 (0.4)	33.9 (0.5)	34.5 (0.6)	36.6 (0.7)	37.5 (0.9)	36.5 (0.8)
<i>Percentiles</i>									
5	204.6 (1.2)	206.3 (1.0)	209.0 (1.2)	204.9 (0.9)	204.0 (1.4)	204.1 (2.2)	204.0 (2.7)	199.8 (2.4)	202.5 (2.7)
10	217.9 (0.9)	219.2 (0.7)	221.8 (1.2)	218.3 (0.8)	217.1 (2.1)	217.3 (1.7)	218.7 (2.2)	217.0 (3.0)	218.6 (2.4)
25	239.4 (0.9)	240.7 (0.8)	242.8 (0.8)	240.6 (0.8)	238.3 (1.0)	239.6 (1.7)	242.5 (1.4)	241.9 (1.0)	243.2 (2.0)
50	262.0 (0.8)	263.1 (1.0)	265.1 (0.6)	263.4 (0.7)	262.2 (1.1)	262.6 (1.4)	267.5 (2.0)	266.9 (1.2)	267.5 (1.0)
75	283.5 (0.9)	284.6 (0.8)	286.9 (0.7)	285.6 (0.7)	285.1 (0.9)	285.6 (1.2)	291.5 (1.1)	290.4 (1.4)	290.6 (1.4)
90	302.2 (0.7)	303.5 (0.9)	305.7 (0.8)	305.0 (0.8)	304.2 (1.5)	306.0 (2.4)	312.4 (1.9)	311.4 (1.2)	310.7 (1.9)
95	313.1 (1.1)	314.3 (0.9)	316.9 (0.8)	316.8 (1.3)	315.8 (1.1)	318.1 (2.7)	324.4 (2.0)	323.7 (1.3)	323.3 (2.5)
Black Students									
Mean	222.4 (1.2)	225.7 (1.2)	232.8 (1.5)	236.3 (1.2)	242.9 (2.4)	241.5 (2.2)	237.6 (2.3)	234.3 (2.4)	234.0 (2.6)
Standard Deviation	33.5 (0.5)	34.9 (0.7)	32.7 (0.8)	34.1 (0.8)	32.1 (1.3)	35.3 (1.5)	39.8 (1.9)	38.0 (1.7)	36.4 (1.3)
<i>Percentiles</i>									
5	166.3 (1.5)	167.2 (2.5)	178.6 (2.4)	180.1 (2.0)	190.6 (3.4)	182.3 (5.3)	169.6 (10.1)	170.0 (3.7)	172.8 (3.5)
10	178.0 (2.2)	180.1 (2.5)	190.6 (3.3)	192.4 (1.9)	202.2 (3.3)	194.3 (7.3)	185.3 (3.3)	183.0 (6.6)	185.4 (8.7)
25	199.1 (1.9)	202.2 (1.3)	210.9 (1.8)	213.3 (2.6)	222.0 (2.4)	217.0 (3.2)	210.0 (3.0)	207.8 (2.3)	209.0 (5.0)
50	223.3 (1.4)	226.0 (1.7)	232.6 (1.3)	236.4 (1.3)	242.4 (2.7)	242.5 (4.0)	239.2 (2.3)	235.9 (3.0)	235.5 (3.1)
75	245.5 (1.4)	249.9 (1.5)	254.8 (1.9)	259.3 (1.1)	263.6 (4.5)	265.7 (2.5)	265.6 (2.8)	261.1 (4.7)	260.1 (3.8)
90	264.8 (1.3)	270.6 (1.2)	275.0 (1.7)	280.3 (1.9)	283.6 (4.7)	285.9 (4.9)	287.3 (3.1)	283.3 (2.8)	280.0 (3.4)
95	276.8 (2.3)	282.7 (2.3)	286.2 (1.5)	292.7 (1.6)	298.9 (2.2)	298.9 (3.0)	302.5 (4.9)	295.2 (5.4)	291.3 (2.8)
Hispanic Students									
Mean	0.0 (0.0)	232.5 (3.0)	237.2 (2.0)	239.6 (2.0)	240.1 (3.5)	237.8 (2.3)	239.2 (3.5)	235.1 (1.9)	238.3 (2.9)
Standard Deviation	0.0 (0.0)	34.5 (1.0)	32.7 (0.8)	34.9 (1.2)	34.6 (2.4)	35.9 (1.3)	40.4 (2.4)	37.6 (2.2)	38.5 (2.2)
<i>Percentiles</i>									
5	0.0 (0.0)	173.7 (6.9)	182.6 (4.8)	180.8 (2.9)	181.4 (6.9)	178.0 (9.6)	165.0 (13.0)	174.2 (5.7)	171.3 (9.1)
10	0.0 (0.0)	186.7 (2.8)	194.9 (4.5)	193.3 (3.3)	194.6 (3.8)	191.3 (4.9)	183.8 (8.0)	186.7 (6.4)	187.5 (5.5)
25	0.0 (0.0)	207.8 (3.0)	214.8 (3.0)	216.1 (2.5)	218.9 (6.1)	214.1 (4.1)	213.0 (5.7)	210.7 (4.9)	214.5 (3.3)
50	0.0 (0.0)	233.5 (3.6)	237.5 (2.4)	240.4 (2.5)	240.3 (4.1)	238.6 (4.1)	242.0 (10.6)	235.5 (4.2)	240.3 (3.4)
75	0.0 (0.0)	256.7 (4.8)	259.3 (1.9)	263.5 (2.3)	262.0 (5.4)	262.2 (3.1)	267.0 (7.7)	259.9 (3.7)	264.3 (2.6)
90	0.0 (0.0)	277.2 (2.3)	279.2 (2.9)	284.2 (2.2)	284.0 (8.7)	283.8 (6.0)	288.7 (8.0)	281.9 (8.4)	286.9 (4.4)
95	0.0 (0.0)	289.1 (3.5)	290.5 (1.5)	295.9 (3.1)	297.3 (10.1)	295.9 (4.5)	303.1 (7.7)	297.7 (15.6)	299.5 (5.4)

The standard errors of the estimated scale scores appear in parentheses.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table C.18

NAEP 1996 Long-Term Trend Reading Results — Age 17
Scale Score Means, Standard Deviations, and Percentiles



	1971	1975	1980	1984	1988	1990	1992	1994	1996
TOTAL									
Mean	285.2 (1.2)	285.6 (0.8)	285.5 (1.2)	288.8 (0.8)	290.1 (1.0)	290.2 (1.1)	289.7 (1.1)	288.1 (1.3)	287.6 (1.1)
Standard Deviation	45.8 (0.5)	44.0 (0.6)	41.8 (0.6)	40.3 (0.3)	37.1 (0.7)	41.3 (0.7)	43.0 (0.6)	44.4 (1.0)	42.2 (0.8)
<i>Percentiles</i>									
5	206.1 (1.5)	209.3 (3.0)	213.0 (1.7)	219.9 (1.3)	226.1 (1.3)	220.0 (2.3)	214.3 (2.9)	210.8 (3.6)	214.1 (2.5)
10	225.3 (1.7)	228.4 (1.7)	230.6 (1.8)	236.0 (0.9)	241.5 (2.2)	236.9 (3.1)	232.7 (2.7)	230.0 (3.1)	232.0 (1.7)
25	255.9 (1.6)	257.8 (1.1)	258.7 (1.2)	262.5 (1.1)	265.7 (1.8)	263.5 (1.3)	262.6 (1.1)	259.8 (1.8)	259.9 (1.1)
50	287.7 (1.4)	287.9 (0.7)	287.5 (1.4)	290.3 (0.9)	291.1 (1.9)	291.1 (1.3)	293.0 (1.2)	289.9 (1.8)	288.9 (1.9)
75	316.7 (1.0)	315.7 (0.7)	314.6 (1.2)	316.8 (0.9)	316.0 (1.4)	318.6 (1.5)	319.4 (1.4)	318.7 (1.8)	316.4 (1.6)
90	341.7 (1.1)	340.0 (0.9)	337.5 (1.4)	339.6 (0.7)	336.9 (2.1)	342.7 (2.1)	342.7 (1.8)	343.0 (1.8)	341.0 (1.7)
95	356.5 (1.5)	354.3 (0.7)	350.9 (1.3)	352.6 (1.0)	348.7 (1.8)	356.0 (1.7)	355.8 (1.9)	357.7 (1.7)	355.1 (2.6)
Male Students									
Mean	278.9 (1.2)	279.7 (1.0)	281.8 (1.3)	283.9 (0.8)	286.0 (1.5)	284.0 (1.6)	284.2 (1.6)	281.7 (2.2)	280.6 (1.3)
Standard Deviation	46.3 (0.6)	45.1 (0.6)	42.7 (0.6)	40.9 (0.4)	37.5 (1.2)	42.6 (0.8)	43.8 (0.8)	45.0 (1.3)	42.5 (1.2)
<i>Percentiles</i>									
5	198.3 (1.6)	201.6 (1.4)	207.2 (1.9)	214.3 (1.5)	222.0 (2.3)	209.4 (3.2)	208.1 (3.7)	202.8 (4.5)	206.4 (3.2)
10	218.2 (2.0)	220.8 (2.0)	225.4 (2.2)	230.1 (1.0)	236.3 (3.7)	228.2 (3.4)	226.0 (3.6)	221.1 (4.2)	223.8 (3.4)
25	249.1 (1.4)	250.9 (1.1)	254.4 (1.5)	257.0 (1.3)	261.6 (1.8)	257.3 (1.9)	255.4 (2.6)	251.9 (2.1)	253.3 (2.1)
50	281.6 (1.4)	282.0 (1.3)	284.1 (1.2)	285.4 (0.8)	287.0 (2.3)	285.9 (2.1)	287.6 (1.7)	284.1 (2.5)	282.4 (1.7)
75	310.9 (1.2)	310.8 (1.0)	311.9 (1.2)	312.3 (1.0)	312.0 (3.4)	313.2 (2.1)	315.0 (1.6)	313.1 (2.8)	309.3 (1.9)
90	336.1 (2.0)	335.9 (1.4)	335.2 (1.3)	335.3 (1.2)	333.4 (2.1)	338.4 (2.3)	338.4 (3.8)	337.5 (3.4)	334.2 (1.9)
95	350.8 (1.7)	350.3 (1.9)	348.3 (1.2)	348.8 (1.6)	345.6 (4.2)	351.9 (1.6)	351.2 (2.9)	351.6 (1.9)	349.1 (2.5)
Female Students									
Mean	291.3 (1.3)	291.2 (1.0)	289.2 (1.2)	294.0 (0.9)	293.8 (1.5)	296.5 (1.2)	295.7 (1.1)	294.7 (1.5)	295.1 (1.2)
Standard Deviation	44.5 (0.6)	42.2 (0.8)	40.5 (0.7)	39.0 (0.4)	36.3 (0.9)	38.8 (0.8)	41.4 (0.9)	42.7 (1.0)	40.6 (0.9)
<i>Percentiles</i>									
5	215.0 (1.9)	218.9 (2.7)	219.4 (2.1)	227.4 (1.9)	231.7 (3.3)	232.3 (3.8)	223.8 (4.5)	223.0 (3.1)	227.9 (3.1)
10	233.3 (1.6)	236.8 (2.0)	236.8 (1.6)	242.9 (1.2)	246.5 (4.8)	247.0 (2.1)	241.8 (1.9)	240.3 (2.8)	243.0 (2.3)
25	262.7 (1.7)	264.9 (1.4)	262.9 (1.8)	268.6 (1.3)	270.2 (2.1)	270.5 (2.3)	270.1 (1.8)	267.3 (1.6)	268.2 (1.7)
50	293.6 (1.2)	293.4 (0.9)	290.7 (1.1)	295.2 (1.0)	294.6 (2.2)	296.6 (1.2)	298.5 (1.6)	296.4 (2.3)	295.4 (2.0)
75	321.7 (1.6)	319.7 (0.7)	317.0 (1.6)	320.9 (0.9)	319.4 (1.5)	323.5 (1.5)	323.8 (1.5)	324.1 (2.6)	323.6 (1.9)
90	346.2 (1.6)	343.3 (1.0)	339.7 (1.7)	343.1 (1.0)	339.8 (1.7)	346.3 (2.5)	346.6 (2.4)	347.9 (3.1)	347.0 (3.5)
95	360.7 (1.2)	357.0 (1.3)	353.2 (1.8)	355.5 (1.2)	351.7 (2.8)	359.4 (2.7)	359.6 (2.7)	362.6 (2.4)	360.7 (4.1)

The standard errors of the estimated scale scores appear in parentheses.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Table C.18
(continued)

NAEP 1996 Long-Term Trend Reading Results — Age 17
Scale Score Means, Standard Deviations, and Percentiles



	1971	1975	1980	1984	1988	1990	1992	1994	1996
White Students									
Mean	291.4 (1.0)	293.0 (0.6)	292.8 (0.9)	295.3 (0.9)	294.7 (1.2)	296.6 (1.2)	297.4 (1.4)	295.7 (1.5)	295.1 (1.2)
Standard Deviation	42.5 (0.4)	39.8 (0.4)	37.9 (0.4)	38.2 (0.3)	36.0 (0.8)	39.6 (0.6)	39.8 (0.6)	41.9 (1.1)	40.5 (0.7)
<i>Percentiles</i>									
5	219.4 (1.4)	225.9 (1.2)	228.5 (1.4)	229.9 (1.4)	232.6 (1.1)	228.5 (2.5)	228.1 (3.2)	221.6 (3.9)	225.4 (2.2)
10	236.6 (1.0)	241.7 (0.9)	243.5 (1.5)	245.6 (0.9)	247.3 (3.7)	246.2 (2.5)	244.9 (2.8)	240.5 (3.8)	242.9 (2.3)
25	263.9 (1.4)	267.0 (0.9)	267.7 (1.0)	270.7 (1.1)	271.4 (1.7)	271.1 (1.4)	272.3 (1.9)	269.6 (3.0)	269.6 (2.6)
50	292.9 (1.2)	294.0 (0.8)	293.6 (0.8)	296.7 (1.1)	295.4 (1.6)	297.5 (1.2)	300.1 (1.9)	297.6 (1.5)	296.2 (1.3)
75	320.1 (1.1)	319.9 (0.7)	318.8 (1.0)	321.6 (0.8)	319.9 (1.9)	323.8 (1.9)	324.5 (1.2)	324.4 (1.5)	323.0 (1.5)
90	344.5 (1.0)	343.2 (0.7)	340.6 (1.3)	343.2 (0.8)	339.7 (1.6)	347.1 (1.6)	346.6 (2.5)	347.1 (2.5)	346.6 (2.3)
95	358.9 (1.4)	357.0 (1.2)	353.5 (1.4)	355.8 (0.9)	351.6 (3.0)	359.7 (1.7)	359.0 (2.5)	361.1 (2.7)	359.0 (3.0)
Black Students									
Mean	238.7 (1.7)	240.6 (2.0)	243.1 (1.8)	263.6 (1.2)	274.4 (2.4)	267.3 (2.3)	260.6 (2.1)	266.2 (3.9)	266.1 (2.7)
Standard Deviation	43.5 (0.7)	43.8 (1.2)	39.5 (1.2)	37.0 (0.8)	35.9 (1.3)	39.2 (2.2)	42.2 (1.7)	42.8 (1.3)	38.6 (1.9)
<i>Percentiles</i>									
5	164.7 (4.4)	164.7 (3.1)	176.0 (2.4)	201.9 (4.1)	214.4 (9.6)	201.3 (7.9)	187.9 (3.3)	192.3 (8.7)	200.6 (5.0)
10	182.1 (4.2)	182.4 (5.3)	191.1 (3.6)	216.0 (2.0)	227.8 (4.3)	217.4 (4.0)	206.2 (6.7)	210.1 (7.7)	217.1 (7.7)
25	210.4 (2.4)	212.1 (3.0)	217.0 (2.7)	239.0 (1.4)	250.5 (2.5)	242.4 (3.9)	235.1 (4.1)	238.9 (4.8)	241.6 (5.7)
50	239.3 (1.6)	242.1 (1.6)	243.9 (2.6)	264.2 (1.2)	274.3 (3.6)	268.4 (1.9)	262.5 (1.6)	267.8 (2.9)	266.1 (3.1)
75	268.1 (2.0)	271.6 (1.4)	270.1 (2.0)	288.3 (1.6)	299.6 (3.1)	293.7 (2.7)	288.3 (1.9)	295.8 (5.6)	291.1 (6.9)
90	294.1 (2.4)	295.7 (1.4)	293.3 (1.7)	310.5 (1.9)	321.0 (4.0)	316.2 (4.8)	312.0 (4.2)	317.5 (7.0)	315.0 (4.4)
95	309.7 (2.2)	308.3 (2.7)	306.6 (2.4)	323.6 (3.4)	333.1 (4.9)	330.5 (11.0)	327.8 (5.4)	334.5 (4.0)	330.3 (6.0)
Hispanic Students									
Mean	0.0 (0.0)	252.4 (3.6)	261.4 (2.7)	268.1 (2.9)	270.8 (4.3)	274.8 (3.6)	271.2 (3.7)	263.2 (4.9)	265.4 (4.1)
Standard Deviation	0.0 (0.0)	42.0 (2.2)	40.1 (1.4)	39.7 (1.5)	37.7 (2.0)	40.7 (2.7)	43.7 (1.8)	44.5 (2.9)	40.4 (2.5)
<i>Percentiles</i>									
5	0.0 (0.0)	184.4 (3.7)	194.3 (7.8)	201.5 (2.4)	204.2 (11.7)	205.9 (11.1)	192.8 (7.2)	186.9 (18.5)	198.1 (6.2)
10	0.0 (0.0)	197.1 (4.9)	208.2 (3.7)	216.6 (2.9)	218.0 (7.4)	224.3 (12.0)	213.1 (9.7)	203.2 (7.9)	212.4 (6.8)
25	0.0 (0.0)	225.4 (5.9)	235.3 (5.0)	241.5 (2.6)	246.4 (5.9)	250.4 (8.3)	240.7 (8.7)	235.6 (6.4)	237.9 (5.0)
50	0.0 (0.0)	252.8 (3.7)	262.6 (3.5)	268.6 (3.1)	273.6 (5.1)	276.3 (3.2)	275.0 (4.7)	264.3 (6.0)	265.0 (5.4)
75	0.0 (0.0)	279.4 (3.0)	288.6 (3.2)	295.4 (3.9)	297.9 (7.1)	302.6 (4.9)	303.3 (6.5)	294.0 (8.2)	293.6 (5.3)
90	0.0 (0.0)	306.7 (6.1)	312.6 (3.0)	318.3 (6.1)	315.9 (18.1)	326.5 (3.2)	326.5 (4.2)	318.2 (5.9)	317.8 (6.6)
95	0.0 (0.0)	320.8 (6.8)	325.1 (3.4)	332.3 (7.7)	328.0 (8.6)	339.4 (11.2)	336.6 (4.6)	331.3 (5.9)	330.0 (5.1)

The standard errors of the estimated scale scores appear in parentheses.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

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