

The NAEP Long-Term Trend Report: What Does It Show?

NAEP 1996 Trends in Academic Progress measures performance of elementary, middle school, and high school students in the core academic areas of science, mathematics, reading, and writing. Science, mathematics, and reading were first assessed in the 1970's; these assessments are administered to students aged 9, 13, and 17. Writing was first assessed in 1984; this assessment is given to students in the 4th, 8th, and 11th grades.

Overall Trends

Viewed broadly from the year of first assessment to 1996, the trends in performance were as follows.

- Performance in science and mathematics at first declined during the 1970's, then improved through the 1980's. During the 1990's, the gains of the 1980's have been largely maintained.
- Reading performance has not changed by large degrees since the initial assessment, although the trend has been toward improvement at all ages tested.
- Writing scores have also not changed much from the initial assessment in 1984 to 1996, with the exception that scores for 17-year-olds have declined somewhat over the years.

Elementary schools: 9-year-olds

Nine-year-olds experienced improvement in science, mathematics, and reading. Their scores in 1996 were higher than those of their counterparts in the initial years of assessment in these subjects. There were more improvements at this age than at ages 13 or 17. Mathematics scores improved the most (12 points), followed by science, while reading scores improved at a slower pace. These results are consistent with TIMSS, which showed that 4th graders are doing well in math and science when compared with students from other countries.

Middle schools: 13-year-olds

Thirteen-year-olds performed higher in 1996 than in the initial assessment year in mathematics and reading. Though their 1996 science score was not significantly different from the initial year's score, there was an overall trend toward higher performance in this subject as well.

High schools: 17-year-olds

Seventeen-year-olds experienced a long-term trend toward better performance in mathematics, though their 1996 score was not different from their score in the initial assessment year. Their performance in reading also showed some improvements in the 1980s, but there was a slight downturn in the 1990's. Average scores for this age group were lower in 1996 than in the initial assessment years in science, and the same was true for 11th graders in writing.

Gaps between Race/Ethnic and Gender Groups

Summary. Several of the gaps between white and black students, white and Hispanic students, and male and female students followed a pattern of narrowing during the 1970s or 1980s, followed by little change during the 1990s. The earlier narrowing of the race and ethnic gaps was often due to a rise in scores for minorities while white scores remained fairly stable. It is also important to note that there have been improvements in academic performance during the 1990s although the gaps have not closed much during this period. Especially in science and mathematics, the scores of all groups have increased.

Science. The black-white gap has decreased for 9- and 13-year-olds, and there was an overall pattern of decreasing gaps between males and females at ages 13 and 17.

Mathematics. The gap between black and white students narrowed at all three ages, and the gap between white and Hispanic students narrowed at ages 13 and 17. The male-female gap narrowed for 17-year-olds, but widened slightly in favor of males at ages 9 and 13.

Reading. The black-white gap decreased at ages 9 and 17. The white-Hispanic gap was about the same in 1996 as in 1975. The male-female gap at ages 13 and 17 have tended to decrease.

Writing. There has been no significant change in gaps between race/ethnic groups or genders between 1984 and 1996.

The Writing Decline

Eleventh grade writing scores decreased by 7 points from 1984 to 1996. This decline took place despite increased percentages of students who reported writing essays, compositions, or themes, reports other than book reports, and letters and poems in English class.

The following may account for this decline:

- fewer 11th grade students report using “process writing” skills, such as rewriting;
- over 70 percent of students report using more traditional strategies of revising and editing, such as correcting spelling and punctuation.

Trends in Subgroup Advanced Science Course-Taking Patterns: 1986 to 1996

	17 year olds Scale Scores	ENROLLMENT		17 year olds At or above level 300
		Chemistry	Physics	
Whites	9 point score >	15 points >	2 <i>points</i> >	10.0 points >
Blacks	7 point score >	20 point >	1 <i>point</i> >	4.2 points >
Hispanics	10 point score >	22 points >	3 <i>points</i> >	9.2 points >
Females	10 point score >	19 points >	4 points >	9.8 points >
Males	5 point score >	11 points >	2 <i>points</i> >	4.5 points >

italicized print = non significant

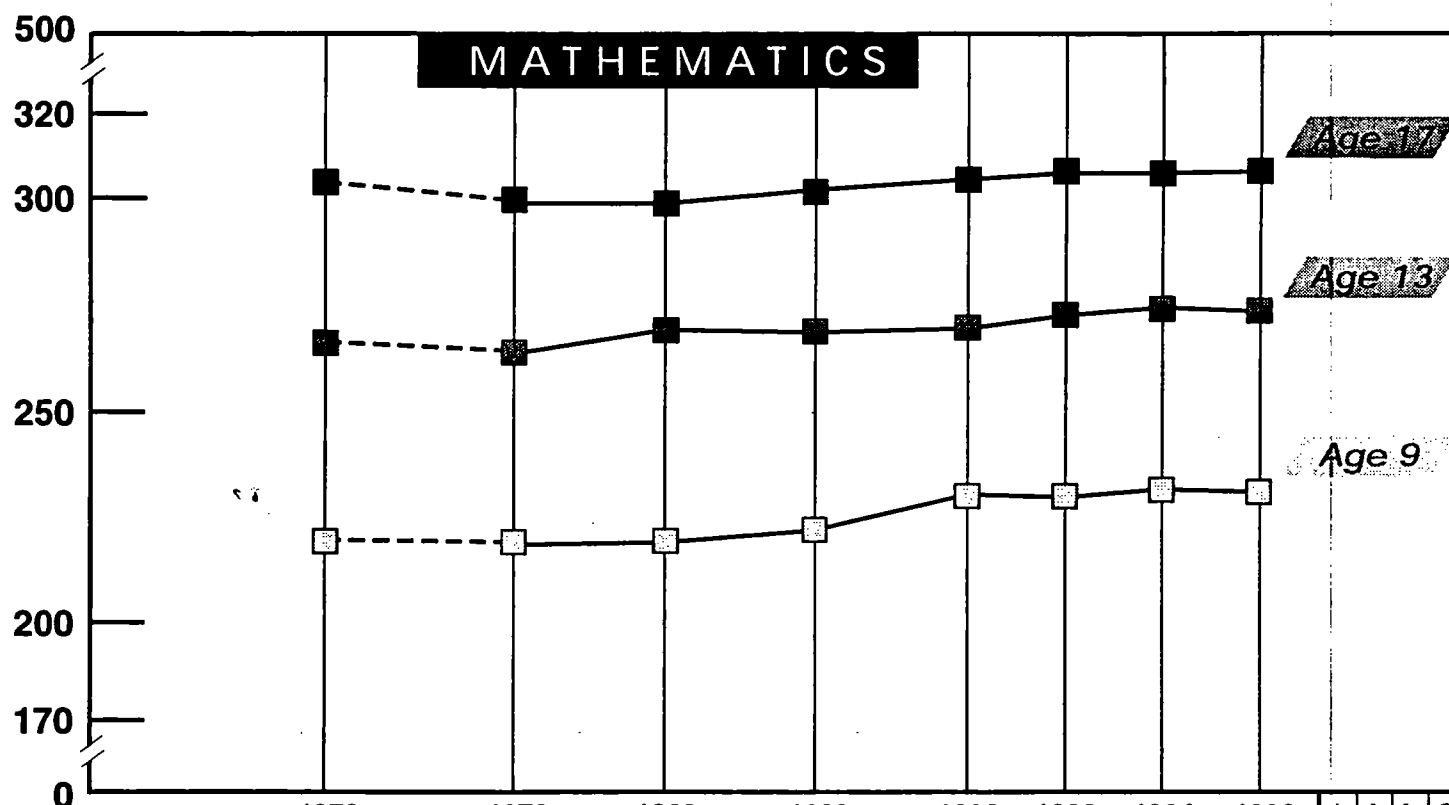
Trends in Subgroup Advanced Mathematics Course-Taking Patterns: 1978 to 1996

	17 year olds Scale Scores	ENROLLMENT		17 year olds At or above level 300
		Algebra II	PreCal/Cal	
Whites	7 point score >	14 points >	7 points >	11.1 points >
Blacks	18 point score >	17 point >	4 <i>points</i> >	14.4 points >
Hispanics	16 point score >	18 points >	3 <i>points</i> >	16.7 points >
Females	8 point score >	16 points >	9 points >	9.4 points >
Males	6 point score >	9 points >	6 points >	7.6 points >

italicized print = non significant

Figure 2

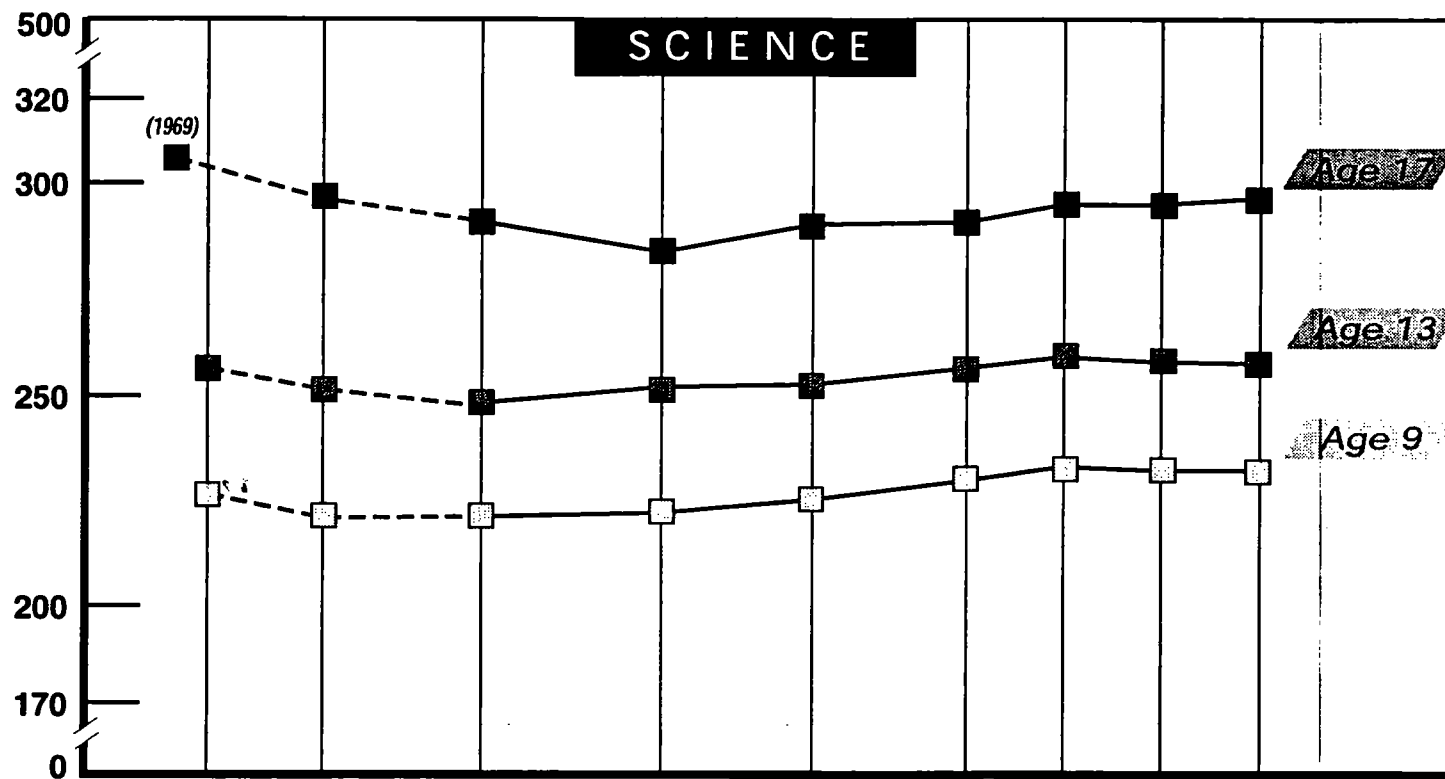
Trends in Average Scale Scores for the Nation



	1973	1978	1982	1986	1990	1992	1994	1996	*	‡	L	Q
Age 17	304(1.1)	300(1.0)	299(0.9)	302(0.9)	305(0.9)	307(0.9)	306(1.0)	307(1.2)			+	+
Age 13	266(1.1)	264(1.1)	269(1.1)	269(1.2)	270(0.9)	273(0.9)	274(1.0)	274(0.8)	+		+	
Age 9	219(0.8)	219(0.8)	219(1.1)	222(1.0)	230(0.8)	230(0.8)	231(0.8)	231(0.8)	+		+	+

Figure 1

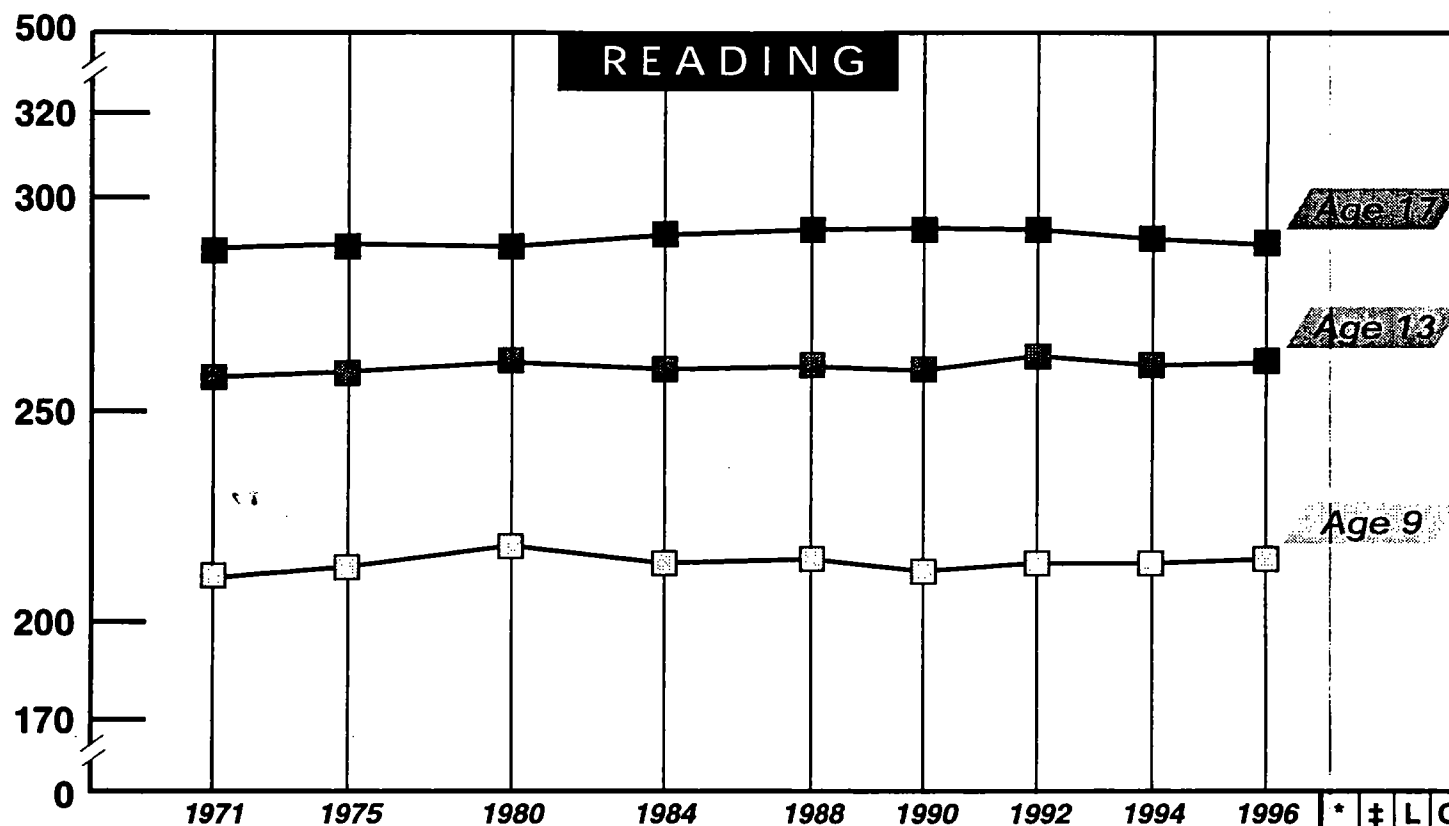
Trends in Average Scale Scores for the Nation



	1970	1973	1977	1982	1986	1990	1992	1994	1996	*	‡	L	Q
Age 17	305 (1.0)	296 (1.0)	290 (1.0)	283 (1.2)	289 (1.4)	290 (1.1)	294 (1.3)	294 (1.6)	296 (1.2)	-		-	+
Age 13	255 (1.1)	250 (1.1)	247 (1.1)	250 (1.3)	251 (1.4)	255 (0.9)	258 (0.8)	257 (1.0)	256 (1.0)			+	+
Age 9	225 (1.2)	220 (1.2)	220 (1.2)	221 (1.8)	224 (1.2)	229 (0.8)	231 (1.0)	231 (1.2)	230 (1.2)	+		+	+

Figure 3

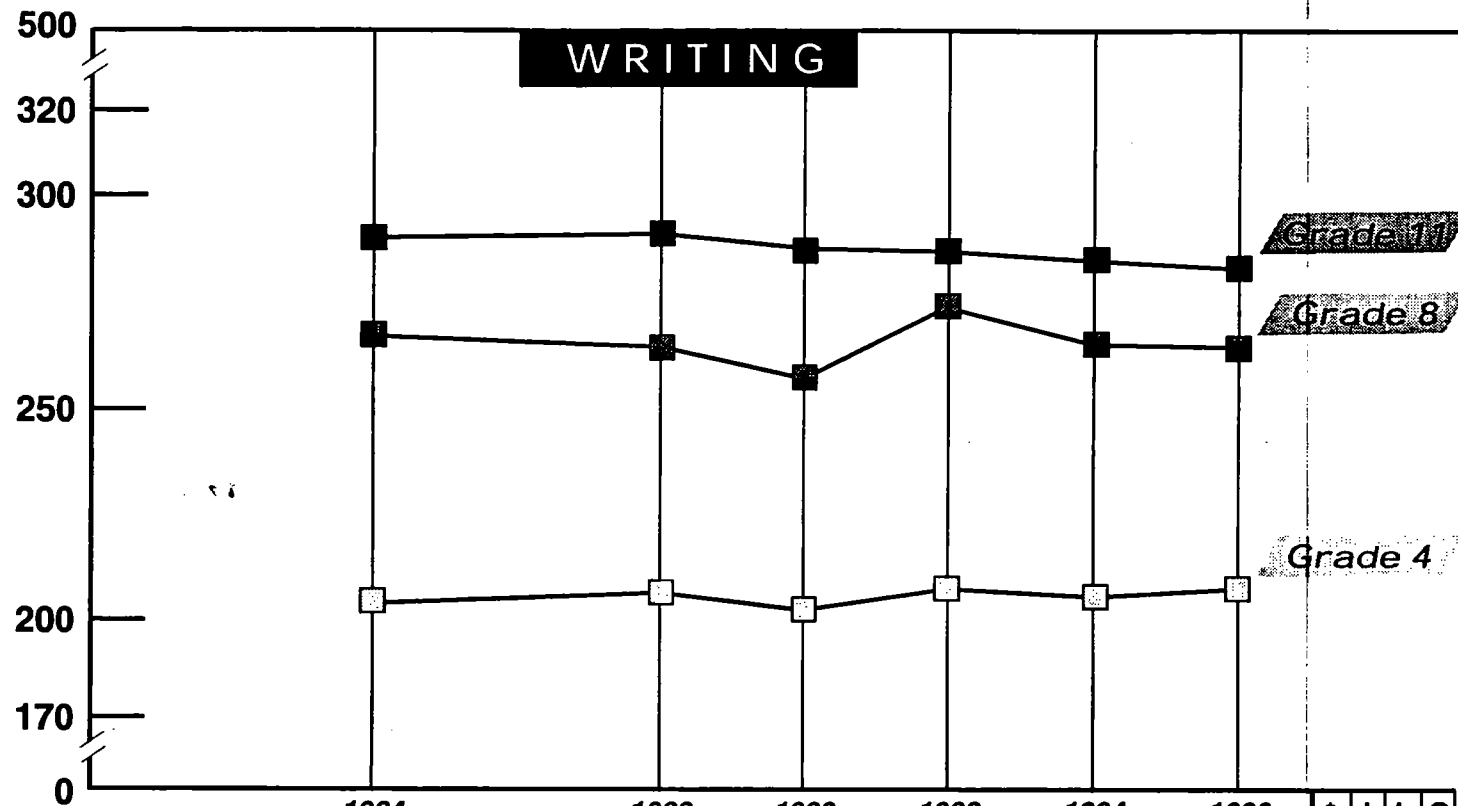
Trends in Average Scale Scores for the Nation



	1971	1975	1980	1984	1988	1990	1992	1994	1996	*	‡	L	Q
Age 17	285(1.2)	286(0.8)	286(1.2)	289(0.6)	290(1.0)	290(1.1)	290(1.1)	288(1.3)	287(1.1)			+	-
Age 13	255(0.9)	256(0.8)	259(0.9)	257(0.5)	258(1.0)	257(0.8)	260(1.2)	258(0.9)	259(0.9)	+		+	
Age 9	208(1.0)	210(0.7)	215(1.0)	211(0.7)	212(1.1)	209(1.2)	211(0.9)	211(1.2)	212(1.0)	+			-

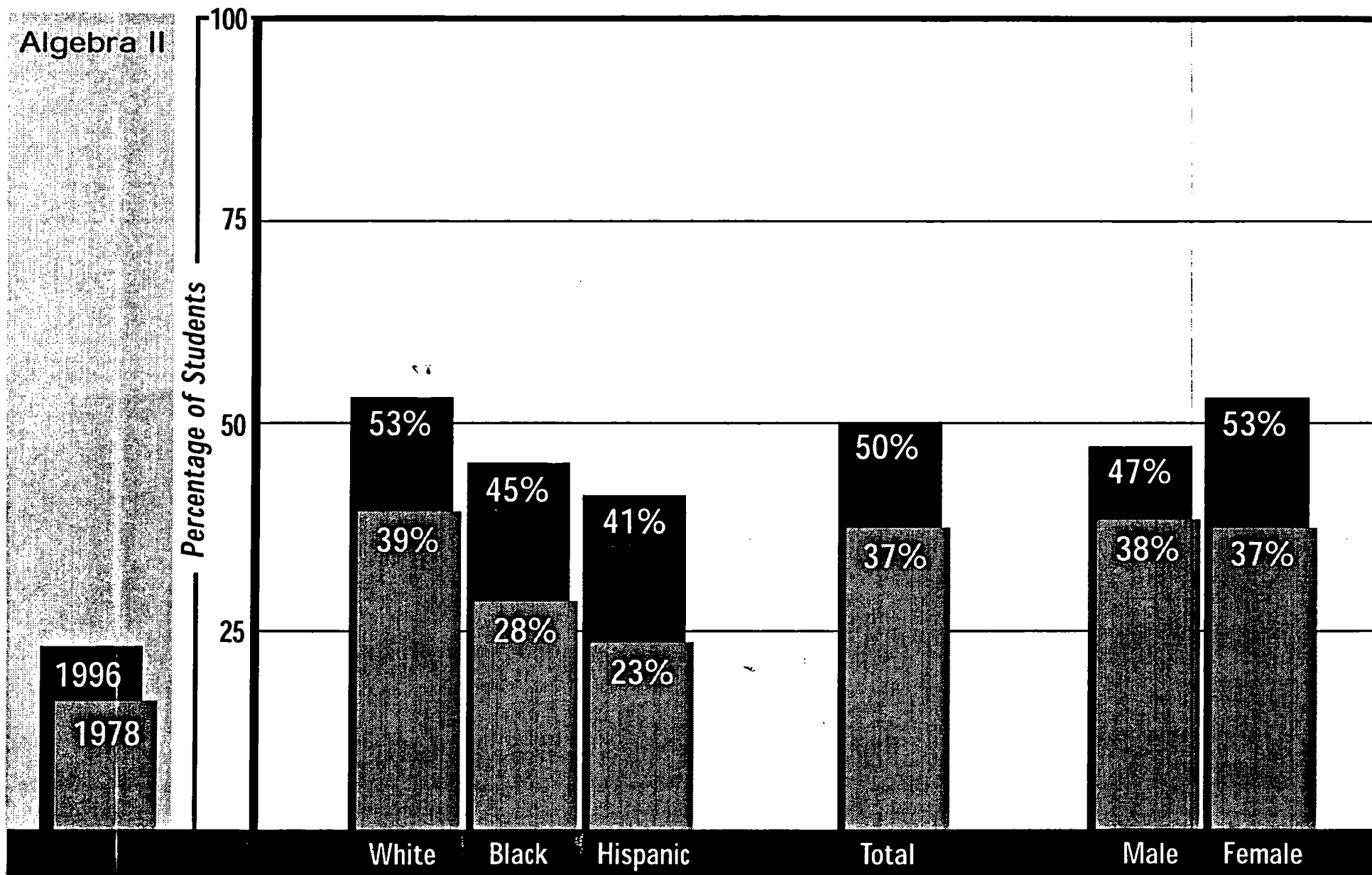
Figure 4

Trends in Average Scale Scores for the Nation

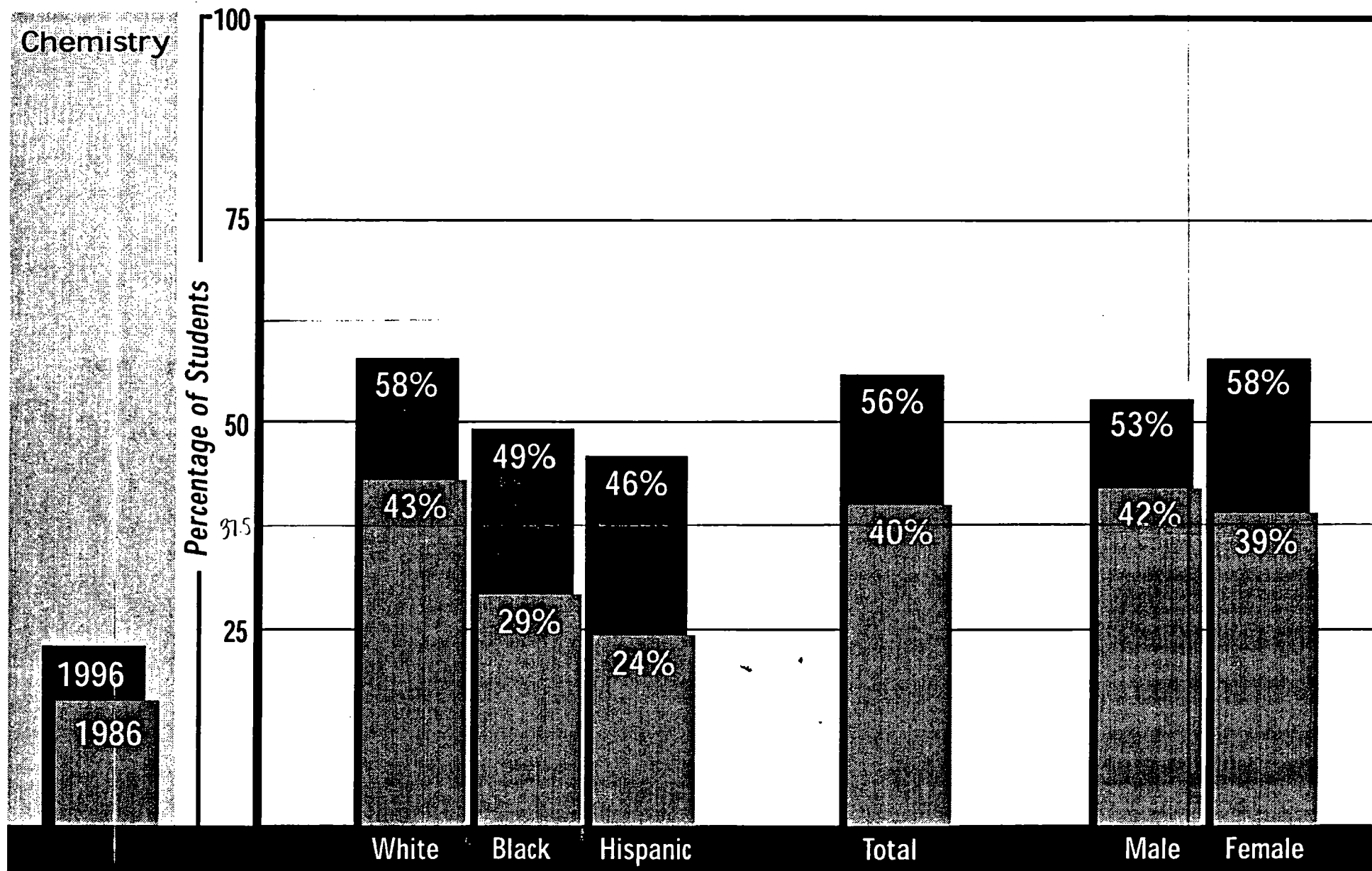


	1984	1988	1990	1992	1994	1996	*	†	L	Q
Grade 11	290(1.6)	291(1.3)	287(1.0)	287(1.4)	285(1.2)	283(1.2)	-		-	
Grade 8	267(2.0)	264(1.3)	257(1.2)	274(1.3)	265(1.3)	264(1.0)				
Grade 4	204(1.5)	206(1.6)	202(1.5)	207(1.5)	205(1.6)	207(1.2)				

Mathematics Course Taking at Age 17, for the Nation, by Gender, and by Race/Ethnicity, 1978 and 1996



Science Course Taking at Age 17, for the Nation, by Gender, and by Race/Ethnicity, 1986 and 1996





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News *from* The College Board

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Contact: Janice Gams, Jeffrey Penn, Fred Moreno

See page 4 for a list of additional tables.

This fall's new college students set records for ethnic diversity, academic preparation, aspirations, and college credit

**Their average SAT® math score is up 3 points, the highest level
in 26 years, but their average verbal score remains unchanged**

Students entering college for the first time this fall are more ethnically diverse, better prepared academically, and more interested in postgraduate degrees than their predecessors, according to the College Board. This fall's class includes 1.1 million students whose average mathematics score is 511 on the SAT I: Reasoning Test, 3 points above last year's level and the highest in 26 years, and whose average SAT verbal score is 505, the same as last year. The class also includes a record 32,000 students qualified to enter as sophomores or juniors on the basis of grades on the Board's Advanced Placement (AP) Examinations.

This student profile is based on survey responses and test scores of students who took the SAT and 400,000 who took AP Examinations prior to graduation. In sheer numbers, SAT students represent about 95 percent and AP students 34 percent of freshmen at four-year colleges and universities.

"Minority students comprise a record 32 percent of graduates who took the SAT, up from 22 percent 10 years ago," said Donald M. Stewart, president of the College Board. "What is more, academic preparation and aspirations for advanced college degrees are also higher for every ethnic group."

This fall, for example, black SAT takers are entering college with an average of 17.5 yearlong courses of academic study, up from 16.8 in 1987, with 59 percent aspiring to a Master's or Ph.D. degree, up from 48 percent. Among the three major Hispanic subgroups, Mexican American students have made similar improvements over the decade, with yearlong academic courses rising from 16.7 to 17.5, and aspirations for advanced degrees increasing from 48 to 57 percent.

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Except for Mexican Americans, whose SAT verbal average has fallen 6 points, verbal and math SAT averages have risen for all ethnic groups over the past decade.

"This is encouraging progress, overall," Mr. Stewart said, "but non-Asian minorities still lag significantly behind whites and Asian Americans in academic preparation for college and SAT scores."

Troublesome trends

The College Board president also pointed out that this year's SAT data signal some troublesome trends.

"While more students are taking rigorous math and science courses and SAT math scores are rising, verbal scores are in a state of limbo," he said. "Many variables can affect the development of verbal skills, but the fact that students are taking fewer English courses in high school may be part of the reason for the lack of improvement in verbal scores."

The low numbers and poor academic preparation of black and Mexican American men are also a matter of concern. Men in these two ethnic groups have the lowest levels of academic preparation for college of any subgroup and are greatly outnumbered by women in these groups.

"If such trends continue," Mr. Stewart said, "the nation will lack a cadre of well-educated black and Mexican American men well into the next century."

SAT data also provide strong evidence of grade inflation. Since 1987, the population of students with A plus, A, and A minus grade-point averages has grown from 28 percent to a record 37 percent, while their SAT scores have fallen an average of 13 points on verbal and 1 point on math. This year's grade average for all SAT takers is 3.22 on a four-point scale (A = 4), well above the average of 3.07 in 1987.

"Educators who give high grades for average performance promote a 'just-good-enough' attitude that is detrimental to students and society," Mr. Stewart warned. "Schools and colleges must reinstate high standards by providing real academic challenges for their students--as well as the ways and means of attaining them."

Women making great academic strides

Gretchen W. Rigol, executive director of Admissions and Guidance Services for the College Board, pointed out that women not only outnumber men in college today but have also been stepping up their study of science and math in high school and aspiring to more advanced degrees in college.

"Over the past decade, women who take the SAT have increased their study of chemistry to the point where they now exceed men, and they are not far behind men in the study of precalculus and

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calculus," she said. "Such preparation is enabling more young women to undertake college majors and enter professions that were closed to them in years past."

She said record numbers of women are selecting majors related to health today. One woman in four plans to major in "health and allied services." Majors in "business and commerce" now attract only 11 percent of women, down from 23 percent 10 years ago.

Ms. Rigol pointed out that more women than men plan to go on for Master's and Ph.D. degrees today, a finding that reverses the situation of 10 years ago and is most evident for women in minority groups. Fully 65 percent of Asian American, black, and Hispanic/Latina women who take the SAT are interested in postgraduate degrees--a level matched only by Asian American men.

Ms. Rigol said women continue to get higher grades than men, and that grading is not uniform across subjects. This year, students' high school grade averages in six academic subject areas ranged from a low of 3.02 in mathematics to a high of 3.70 in arts/music. Women took fewer mathematics courses and more arts/music courses, and their overall grade average was 3.29, compared to the 3.13 average of men.

College-level AP study now in 53 percent of high schools

The College Board also notes improved academic preparation for college in its Advanced Placement (AP) Program, which enables students to earn college credit for demanding course work in high school by taking one or more of 31 college-level AP Examinations developed by school and college faculty.

"This fall, a record 399,907 students are entering college with AP Examinations on their records," said Wade Curry, director of the AP Program. "In numbers alone, these students represent about one-third of the freshmen at four-year colleges and universities, and their numbers are growing every year. They include a record 32,000 students with enough AP Exam credits to enter college as sophomores, and another 1,000 with enough credits to enter as juniors.

"These are some of the nation's most promising young scholars," he stated. "By taking advantage of the most challenging courses available in their high schools, they now have more options for enriching and hastening their college degrees. Research also shows that they are entering college with the study and analytical skills they need to succeed. In college, AP students tend to get higher grades, take tougher majors, study abroad, attain more leadership positions, receive more honors, finish college, graduate with double majors, and go on to graduate school at greater rates than their classmates.

"The growing popularity of the AP Program indicates that students, teachers, and schools welcome its high standards and extraordinary challenge," he said. "States also welcome the standards which AP

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courses provide. Today, 23 states, from Florida to Minnesota and Connecticut to California, support AP through special funding for teacher training, AP Examination fees, or equipment and course materials."

In May, more than 580,000 students in 53 percent of the nation's high schools took at least one of the annual AP Examinations. Reflecting trends observed with the SAT, almost 30 percent of these students were ethnic minorities, up from 19 percent 10 years ago, and women outnumbered men. The female majority is particularly large for black and Mexican American AP students, who are more than 60 percent female.

"We can only imagine what such trends mean for the future," Mr. Curry said. He pointed out that over the past decade women's participation has tripled in AP calculus, chemistry, physics, and other science courses and in the number of women receiving the top AP Examination grade in math and science. In that time, men's participation in math and science courses has doubled, as has the number of top grades they receive on related AP Exams.

Founded in 1900, the College Board is a national, nonprofit membership association of schools, colleges, and other educational organizations working together to help students succeed in the transition from school to college. The Board meets the diverse needs of schools, colleges, educators, students, and parents through the development of standards of excellence; by providing programs and services in guidance, assessment, admission, placement, financial aid, and teaching and learning; and by conducting forums, research, and public policy activities. In all of its work, the Board promotes universal access to high standards of learning, equity of opportunity, and sufficient financial support so that every student has the opportunity to succeed in college and work.

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The following additional tables are available by fax prior to the embargo. Reporters may request a copy by phoning Scott Jeffe at (212) 713 8178 or e-mailing him at sjeffe@collegeboard.org.

- A. Changes in academic study and aspirations of high school graduates who took the SAT, by ethnic group and gender, 1987-1997
- B. SAT scores of men and women within ethnic groups, 1987, 1996, 1997
- C. Increases in the percentages of men and women taking various AP Exams, 1987-1997
- D. Increases in numbers of minority students taking AP Exams, 1987-1997; number of students in each minority group who took AP Exams prior to high school graduation in 1977
- E. Rising grade-point averages of men and women in six academic subject areas, 1987-1997; grading is not uniform across subjects
- F. SAT scores and percentages of men and women interested in popular college majors, 1987 and 1997
- G. Average SAT math scores rise with study of calculus and physics for males and females in all ethnic groups, 1997
- H. SAT scores of all students who took specific AP Examinations, 1997

For release after 3 p.m. (EDT) Tuesday, August 26, 1997

Table 1: Mean SAT scores of entering college class, 1967-1997*

Year	Male		Female		All	
	Verbal	Math	Verbal	Math	Verbal	Math
1967	540	535	545	495	543	516
1968	541	533	543	497	543	516
1969	536	534	543	498	540	517
1970	536	531	538	493	537	512
1971	531	529	534	494	532	513
1972	531	527	529	489	530	509
1973	523	525	521	489	523	506
1974	524	524	520	488	521	505
1975	515	518	509	479	512	498
1976	511	520	508	475	509	497
1977	509	520	505	474	507	496
1978	511	517	503	474	507	494
1979	509	516	501	473	505	493
1980	506	515	498	473	502	492
1981	508	516	496	473	502	492
1982	509	516	499	473	504	493
1983	508	516	498	474	503	494
1984	511	518	498	478	504	497
1985	514	522	503	480	509	500
1986	515	523	504	479	509	500
1987	512	523	502	481	507	501
1988	512	521	499	483	505	501
1989	510	523	498	482	504	502
1990	505	521	496	483	500	501
1991	503	520	495	482	499	500
1992	504	521	496	484	500	501
1993	504	524	497	484	500	503
1994	501	523	497	487	499	504
1995	505	525	502	490	504	506
1996	507	527	503	492	505	508
1997	507	530	503	494	505	511

*Scores for 1967 through 1971 are based on estimates. For 1972-1986 a formula was applied to the original mean and standard deviation to convert the mean to the recentered scale. For 1987-1995 individual student scores were converted to the recentered scale and then the mean was recomputed. For 1996 most students received scores on the recentered scale. (Any score on the original scale was converted to the recentered scale prior to recomputing the mean.) All scores for 1997 were recentered.

How have college-bound students changed since 1987?

Based on students taking the SAT I: Reasoning Test prior to high school graduation.

More students take science and math courses	More students take 4 or more yearlong courses before graduation		More students take honors courses		SAT verbal means declined slightly, while math means rose		
	1987	1997	1987	1997		1987	1997
English	88%	84%	28%	38%	Verbal	507	505
Mathematics	63%	69%	22%	29%	Male	512	507
Social science/history	39%	49%	18%	30%	Female	502	503
Natural science	37%	49%	19%	29%	Math	501	511
Foreign/classical languages	22%	26%	12%	18%	Male	523	530
Art and music	17%	22%	6%	8%	Female	481	494

Higher academic goals	1987	1997
Certificate program	2%	1%
Associate degree	2%	2%
Bachelor's degree	30%	23%
Master's degree	26%	30%
Doctoral/related degree	17%	24%
Other	1%	1%
Undecided	21%	20%

Parental education rising	1987	1997
No high school diploma	4%	4%
High school diploma	38%	34%
Associate degree	7%	8%
Bachelor's degree	27%	28%
Graduate degree	24%	25%

More students with A averages	1987	1997
A+, A, A- grade averages	28%	37%
B averages	54%	49%
C averages	19%	14%

Grades rising across curriculum*	1987	1997
Arts and music	3.58	3.70
English	3.06	3.20
Foreign/classical languages	3.04	3.16
Mathematics	2.88	3.02
Natural sciences	2.97	3.14
Social sciences/history	3.13	3.28

*Based on 4-point system, where A = 4.00.

More students to seek financial aid	1987	1997
	66%	76%

Ethnic diversity increasing	1987	1997
Amer. Indian/Alaskan Native	1%	1%
Asian/Asian American/Pacific Is.	6%	9%
Black or African American	9%	11%
Mexican American	2%	4%
Puerto Rican	1%	1%
Hispanic or Latino	2%	3%
White	78%	68%
Other	1%	3%

Language diversity increasing	1987	1997
English	86%	82%
English and another	8%	9%
Another language	5%	8%

Slight change in citizenship	1987	1997
U.S. citizenship	95%	92%
Permanent resident	3%	4%
Citizen of another country	2%	3%

Health majors most popular	1987	1997
Health-related	12%	19%
Business	23%	13%
Social science/history	11%	11%
Education	6%	9%
Engineering	11%	8%

More students from public schools	1987	1997
Public	81%	83%
Nonpublic	19%	17%

Women a growing majority	1987	1997
Percentage of women	52%	54%

(Women reached majority status in the early 1970s.)

College Board Profile of Advanced Placement students in the class of 1997

Estimates based on the 399,907 students who took college-level AP exams any time prior to graduation in 1997.

Subject areas	AP students with 4 or more yearlong courses before graduation		AP students with honors courses before graduation		SAT scores of AP graduates
	All AP students	Those with AP grades of 3,4,5*	All AP students	Those with AP grades of 3,4,5*	
English	85%	86%	74%	78%	Verbal
Mathematics	73%	75%	63%	68%	Male 596
Social science/history	50%	52%	64%	69%	Female 586
Natural science	58%	60%	62%	67%	Math
Foreign/classical languages	40%	44%	38%	44%	Male 626
Art and music	23%	25%	13%	14%	Female 577

High academic goals	All AP graduates of 3,4,5*		Parental education	All AP graduates of 3,4,5*	
	All AP graduates of 3,4,5*	Those with AP grades of 3,4,5*		All AP graduates of 3,4,5*	Those with AP grades of 3,4,5*
Certificate program	<1%	<1%	No h.s. diploma	5%	4%
Associate degree	<1%	<1%	H.s. diploma	31%	27%
Bachelor's degree	12%	10%	Associate degree	7%	6%
Master's degree	31%	31%	Bachelor's degree	31%	33%
Doctoral/related degree	39%	42%	Graduate degree	26%	30%
Other	<1%	<1%			
Undecided	16%	17%			

High school grade averages	All AP graduates of 3,4,5*	Those with AP grades of 3,4,5*
A+, A, A- grade averages	68%	75%
B averages	30%	24%
C averages	2%	1%

Many AP students plan to seek financial aid	All AP graduates of 3,4,5*	Those with AP grades of 3,4,5*
	77%	76%

Ethnic diversity of AP students	All AP graduates of 3,4,5*	Those with AP grades of 3,4,5*
Amer.Indian/Alaskan Native	1%	1%
Asian/Asian American/Pacific Is.	12%	13%
Black or African American	3%	3%
Mexican American	4%	4%
Puerto Rican	1%	1%
Hispanic or Latino	3%	3%
White	71%	72%
Other	3%	3%

Health majors most popular	All AP graduates of 3,4,5*	Those with AP grades of 3,4,5*
Health-related	18%	16%
Business	7%	6%
Social science/history	11%	11%
Education	4%	4%
Engineering	8%	8%

Average grades**	All AP graduates of 3,4,5*	Those with AP grades of 3,4,5*
Arts and music	3.88	3.90
English	3.60	3.67
Foreign/classical lang.	3.61	3.68
Mathematics	3.47	3.55
Natural sciences	3.57	3.64
Social sciences/history	3.66	3.72

**Based on a 4-point system, where A = 4.00.

Language diversity	All AP graduates of 3,4,5*	Those with AP grades of 3,4,5*
English	92%	92%
English and another	7%	7%
Another language	2%	2%

Citizenship of AP students	All AP graduates of 3,4,5*	Those with AP grades of 3,4,5*
U.S. citizenship	94%	94%
Permanent resident	5%	5%
Citizen of another country	1%	1%

AP secondary schools	All AP graduates of 3,4,5*	Those with AP grades of 3,4,5*
Public	82%	80%
Nonpublic	18%	20%

Women the majority in AP	All AP graduates of 3,4,5*	Those with AP grades of 3,4,5*
Percentage of women	56%	54%

*Students with these AP exam grades qualify for credit at the vast majority of colleges, including the most selective..

For release after 3 p.m. (EDT), Tuesday, August 26, 1997

Table 2: SAT Averages by State for 1987 and 1994-1997

Comparing or ranking states on the basis of SAT scores alone
is invalid and strongly discouraged by the College Board

States	1987		1994		1995		1996		1997		% Graduates Taking SAT*
	V	M	V	M	V	M	V	M	V	M	
Alabama	553	535	558	547	565	555	565	558	561	555	8%
Alaska	521	504	510	502	521	513	521	513	520	517	48%
Arizona	539	526	519	519	524	520	525	521	523	522	29%
Arkansas	556	540	552	537	556	542	566	550	587	558	6%
California	500	507	489	506	492	509	495	511	496	514	45%
Colorado	542	535	532	534	538	538	538	538	536	539	30%
Connecticut	515	499	502	497	507	502	507	504	509	507	79%
Delaware	517	496	505	491	505	494	508	495	505	498	65%
D.C.	482	462	479	468	485	471	489	473	490	475	60%
Florida	501	497	490	492	497	496	498	496	499	499	50%
Georgia	478	470	474	474	483	477	484	477	486	481	63%
Hawaii	481	502	477	504	483	507	485	510	483	512	54%
Idaho	548	524	537	529	544	532	543	536	544	539	15%
Illinois	539	540	553	562	563	574	564	575	562	578	14%
Indiana	492	487	488	493	492	494	494	494	494	497	57%
Iowa	588	586	580	586	589	595	590	600	589	601	5%
Kansas	572	562	568	565	576	571	579	571	578	575	9%
Kentucky	554	538	549	543	552	542	549	544	548	546	12%
Louisiana	548	530	556	549	560	552	559	550	560	553	10%
Maine	510	493	497	490	504	497	504	498	507	504	67%
Maryland	513	502	505	503	506	503	507	504	507	507	64%
Massachusetts	511	500	502	500	505	502	507	504	508	508	80%
Michigan	534	533	547	554	559	565	557	565	557	566	11%
Minnesota	548	549	569	576	580	591	582	593	582	592	9%
Mississippi	561	540	559	546	572	557	569	557	567	551	4%
Missouri	549	538	560	554	569	566	570	569	567	568	9%
Montana	555	548	540	542	549	553	548	547	545	548	22%
Nebraska	563	562	557	559	568	570	567	568	562	564	9%
Nevada	516	508	506	508	511	508	508	507	508	509	32%
New Hampshire	527	512	515	510	520	515	520	514	521	518	70%
New Jersey	502	493	494	500	496	503	498	505	497	508	68%
New Mexico	559	544	550	546	559	549	554	548	554	545	12%
New York	501	495	492	497	495	498	497	499	495	502	74%
North Carolina	477	468	482	482	488	482	490	486	490	488	59%
North Dakota	583	573	570	573	587	602	596	599	588	595	5%
Ohio	532	521	533	531	536	535	536	535	535	536	25%
Oklahoma	560	539	557	554	565	553	566	557	568	560	8%
Oregon	521	509	513	515	525	522	523	521	525	524	50%
Pennsylvania	505	491	494	489	496	489	498	492	498	495	72%
Rhode Island	509	492	496	488	502	490	501	491	499	493	70%
South Carolina	474	466	473	473	478	473	480	474	479	474	56%
South Dakota	587	577	558	563	579	576	574	568	574	570	4%
Tennessee	563	543	562	553	571	560	563	552	564	556	13%
Texas	493	486	489	500	495	501	495	500	494	501	48%
Utah	577	557	582	573	585	578	583	575	578	570	4%
Vermont	518	500	504	498	506	499	506	500	508	502	69%
Virginia	511	499	501	495	504	494	507	496	506	497	69%
Washington	532	519	511	512	519	517	519	519	523	523	46%
West Virginia	534	519	516	507	525	509	526	506	524	508	18%
Wisconsin	550	551	562	572	574	585	577	586	579	590	7%
Wyoming	557	551	535	541	551	544	544	544	543	543	12%
National	507	501	498	504	504	506	505	508	505	511	42%

*Based on number of high school graduates in 1997 as projected by the Western Interstate Commission for Higher Education, and number of students in the Class of 1997 who took the SAT I.

Facts About the ACT

What is the national average ACT score for 1997?	21.0
Is that an increase or decrease from 1996?	An increase of 0.1
What is the source of the ACT national average?	The scores of all ACT-tested high school graduates
How many graduates is that this year?	959,301
What is the highest possible ACT score?	36
What is the likelihood that a 1997 graduate scored 36?	1 in 13,000
In what year did the ACT national average last decrease?	In 1989
In how many of the last 14 years has the ACT average risen or remained steady?	12
How many questions are asked on the ACT?	215
What subject areas do the ACT questions cover?	English, math, reading, science
In how many states is the ACT administered?	50
Since when has the ACT been a 50-state exam?	Since 1960
In how many states do over half the high school graduates take the ACT?	25
In how many do over half take another college-entrance exam?	19
California and New York both have more ACT-tested graduates than which of these Midwestern states: Indiana, Iowa, Kansas, Nebraska, South Dakota?	All of them
What are the ranks of Texas, Tennessee and Florida among states with the most ACT-tested 1997 graduates?	4th, 5th, 6th
Which college-entrance test is <i>required</i> by more four-year private colleges?	The ACT
Which test is <i>preferred</i> by more four-year public universities?	The ACT
To how many Ivy League schools will an ACT score admit a student?	All eight
How many times each school year does a student take the ACT?	Over 1.6 million
When was the ACT first administered?	Fall 1959

News from ACT

EMBARGOED FOR USE UNTIL 2:00 P.M. EDT WEDNESDAY, AUG. 13, 1997

Hold for release: 2:00 p.m. EDT Wednesday, August 13, 1997

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NOTE TO EDITORS/REPORTERS: This news release and accompanying documents report information about 1997 high school graduates who took the ACT Assessment for college entrance. States, districts and schools receive similar information about their students. However, ACT releases only national and selected state data; ACT does not provide local district or school data.

ACT is a nonprofit organization that provides test-based programs and services designed to enhance individuals' decision-making at key transition points in their educations and careers.

TREND OF INCREASES IN ACT COLLEGE-ENTRANCE SCORES CONTINUES

- * Comprehensive Improvements in Minority Scores
- * Mathematics Scores Increase
- * Males Raise Composite Score, Females Up in Science & Math
- * Plateau in Percentage of Graduates Prepared for College

Iowa City, Iowa, August 13 -- The national average composite score on the ACT, the entrance examination taken by nearly 60 percent of America's entering college freshmen, increased this year for the second consecutive time and the fourth time in five years. For a

(more)



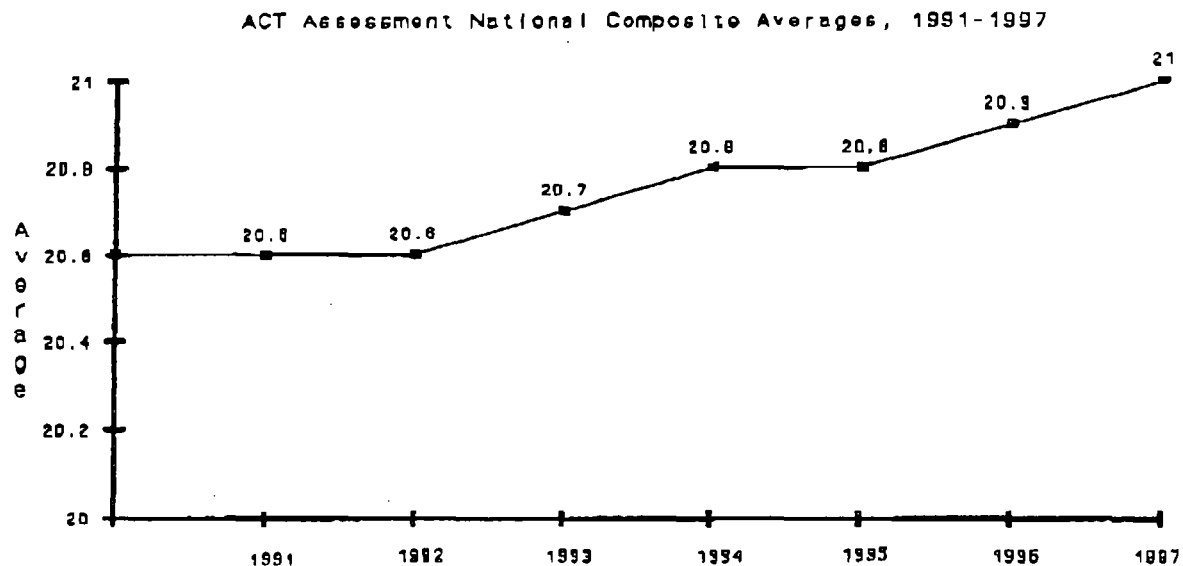
Information for Life's Transitions

Iowa City, Iowa

ACT News -- Page 2
Embargoed for August 13

record eight consecutive years, the national ACT average has either increased or remained constant.

The ACT score range is 1 to 36, and the national average, 21.0, was derived from the individual composite scores of the nearly one million 1997 U.S. high school graduates who took the ACT Assessment.



According to an announcement today from ACT President Richard L. Ferguson, this is only the second time since ACT scores were first reported in 1960 that the national average score has increased four times in a five-year period. The earlier period was from 1984 through 1988.

(more)

ACT News -- Page 3
Embargoed for August 13

"Each year we caution that an increase from one year to the next doesn't signal a trend," Ferguson said, "and this year will be no different. But an increase in four out of five years definitely is a positive trend.

"We're certainly seeing a different pattern in ACT scores than we did 20 or 30 years ago. In the '60s and '70s, the scores were all over the charts. It was typical for the national average to increase one year and ~~decrease the next~~, or to fall for two or three years in a row before increasing the next year.

"But since the mid-1980s, scores have been much more stable. The national average has decreased only twice since 1984, the last time in 1989."

Ferguson attributed the more stable and slightly increasing scores of recent years to greater numbers of high school students, especially minorities and females, taking higher-level courses in English, math, social studies and science, the academic areas measured by the four tests in the ACT Assessment.

"This period of stable or increasing scores coincides almost exactly with a nationwide effort, beginning in about 1983, to improve the education we offer our young people, with a special emphasis on the need for more rigorous college-preparatory coursework," Ferguson said. "The year-to-year change may be slight, but viewed as a long-term trend it's good news for U.S. education."

(more)

ACT News -- Page 4
Embargoed for August 13

*** Comprehensive Improvements in Minority Group Scores**

"The relationship between higher average ACT scores and better preparation for college is illustrated in the recent performance of Native American students," Ferguson said.

"Although, as a group, they still take fewer college-preparatory courses than majority-group students, Native Americans have ~~reported an increase from 43 to 51~~ since 1992 in the percentage completing core coursework.

"And that has translated into an increase in their average composite score in each of the last five years. No other ACT-tested subgroup, whether male or female, minority or majority, has made comparable gains over this period."

College-bound Native Americans have also raised their average English and mathematics scores in all of the last five years, their reading score in four of the five and their science reasoning score in three.

(more)

ACT News -- Page 5
Embargoed for August 13

ACT Performance, of Native American Students, with No. Tested, 1992-97

	1992	1993	1994	1995	1996	1997
ACT Test	9,784	10,384	11,026	11,361	11,580	11,509
English	17.3	17.5	17.6	17.7	17.9	18.0
Mathematics	17.8	17.9	18.0	18.1	18.2	18.5
Reading	18.4	18.8	18.8	19.1	19.2	19.4
Science Reasoning	18.6	18.9	19.1	19.1	19.4	19.4
Composite	18.1	18.4	18.5	18.6	18.8	19.0

"We're also pleased to report that Native Americans aren't alone among minority groups in demonstrating higher achievement this year," Ferguson said. "All the other minorities also increased their average composite score, and most either held their ground or, more often, increased their scores on the subject-area tests.

"The only subject-test decreases were in the reading scores for Asian Americans, historically the minority group with the highest levels of achievement, and for Hispanics."

College-bound Asian Americans raised the remaining three of their subject-area scores in 1997, and Hispanic students raised two and stayed where they were in one. Both African Americans and Mexican Americans raised two subject scores and remained even on two.

(more)

ACT News -- Page 6
Embargoed for August 13

Changes in ACT Test Scores, 1996 to 1997, by Racial/Ethnic Group

Racial/Ethnic Group	English	Math	Reading	Science Reasoning	Comp.
African American	None	+ 0.1	None	+ 0.1	+ 0.1
Asian American	+ 0.1	+ 0.4	- 0.1	+ 0.1	+ 0.1
Caucasian	+ 0.1	+ 0.4	None	None	+ 0.1
Mexican American	+ 0.1	+ 0.3	None	None	+ 0.1
Native American	+ 0.1	+ 0.3	+ 0.2	None	+ 0.2
Other Hispanic	+ 0.1	+ 0.3	- 0.1	None	+ 0.1

Of those 1997 ACT-tested graduates reporting their racial/ethnic status, 23.5 percent identified themselves as members of a minority group. This is an increase of 0.5 percent over 1996 and an all-time high.

*** Math Scores Increase**

Although all ACT subject-test scores were higher this year for various of the subgroups, whether males or females or the racial/ethnic populations, the mathematics score was the only subject score that was higher for the entire set of 1997 ACT-tested high school graduates.

(more)

ACT News -- Page 7
Embargoed for August 13

"The increase in the mathematics score this year, 0.4 point, is relatively large," Ferguson said, "but we have at different times seen increases of similar magnitude in other subject-test scores, such as English or Reading.

"Many factors influence test score averages, including changes in the tested population, alterations in students' course-taking patterns, improvements in instruction and the use of new technology, such as calculators.

"We can't determine with certainty the exact proportion of this year's increase in the math score that's attributable to any one of these factors, but the presence of calculators likely has made some difference. Students who are used to using calculators can perform computations more easily with them than without them."

Ferguson said that ACT began allowing certain types of calculators, after long study of their potential effects, because of their universal presence in high school classrooms and because of their endorsement by professional groups such as the National Council of Teachers of Mathematics.

"The ACT mathematics test is not designed to measure one's skill with a calculator," Ferguson added, "nor are calculators required for successful performance. No ACT math question depends for its answer on a calculator. A calculator is simply a tool."

"One thing calculators can do is help students work more quickly, thus allowing them to answer more questions than they might otherwise, or to have more time to go back and check their answers for accuracy.

(more)

ACT News -- Page 8
Embargoed for August 13

"It also appears that calculators allow well-prepared students to eliminate errors of carelessness and better apply their knowledge. But calculators don't make up the difference in performance for students with inadequate preparation."

ACT data show that both scores and score increases are greater for those students who've taken upper-level math courses than for those students who've had only algebra and geometry.

ACT Mathematics Scores by Level of Preparation, 1996-97

Mathematics Course Sequence	Males		Females	
	1997	1996	1997	1996
Alg 1 & 2, Geom, Trig, Calc	26.0	25.4	24.6	24.1
Alg 1 & 2, Geom, Trig	21.3	21.0	20.3	20.0
Alg 1 & 2, Geom	18.2	18.1	17.5	17.4

"It's clear that the largest gains in math are associated with the higher-achieving students, those who also have taken more comprehensive coursework," Ferguson said. "This relationship between a student's level of preparation and his or her ACT performance has been demonstrated over the years, not only on the mathematics test but on the other subject tests as well."

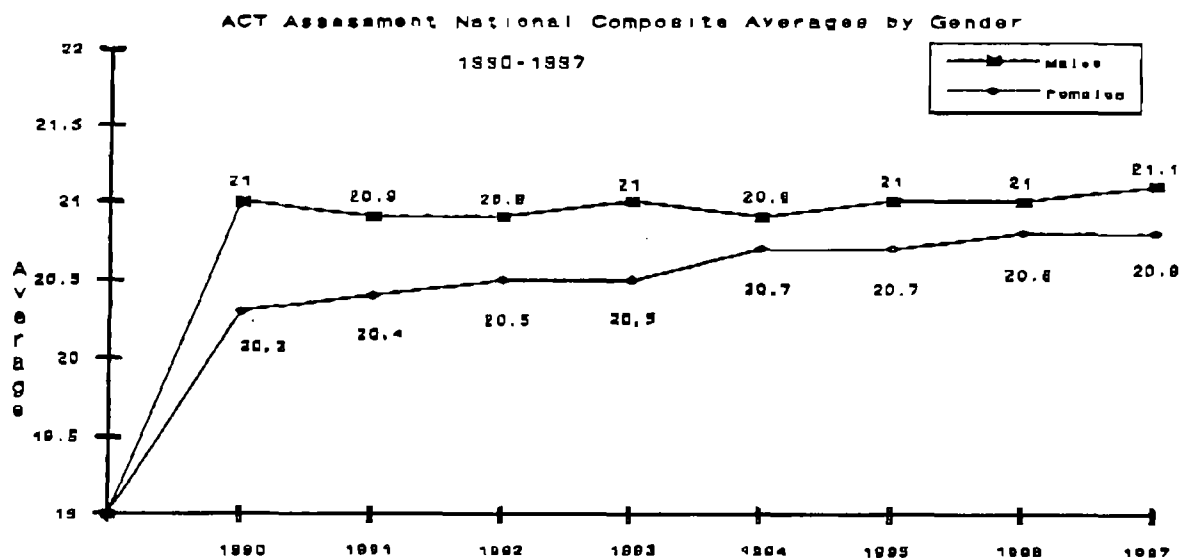
(more)

ACT News -- Page 9
Embargoed for August 13

*** Males Raise Composite Score, Females Up in Science & Math**

"The recent increases in the national average score have been due largely to the improved performance of female students, who raised their composite score four times between 1990 and 1996, while the average achieved by males remained steady during that time," Ferguson said.

"But this year males lifted their composite score from 21.0 to 21.1, while females held at 20.8. Still, the small difference between the composite scores of male and female students over the last four years is as narrow as it has ever been."



(more)

ACT News -- Page 10
Embargoed for August 13

"The primary reason for the narrow gap in the 1990s has been females' increased participation in college-prep courses," Ferguson said.

"The percentages of males and females who report taking the core curriculum have been equal for the last two years. Earlier, significantly higher proportions of males took core courses, especially in math and science."

Male students increased their ~~composite average in 1997 by~~ achieving higher scores in English, math and reading, and by equalling their 1996 performance in science reasoning.

Females increased their science reasoning and math scores. They also held steady in English but dropped 0.1 point in reading, where they still outperform males.

*** Plateau in Percentage of Graduates Prepared for College**

"One sign that annual increases in national test score averages may not continue much longer, unless we can encourage more college-bound students to take higher-level courses in high school, is the recent levelling off in the percentage of students reporting college-preparatory courses," Ferguson said. "After several years of significant increases in the percentage of students taking core courses, we've seen only very slight improvement in the last two years."

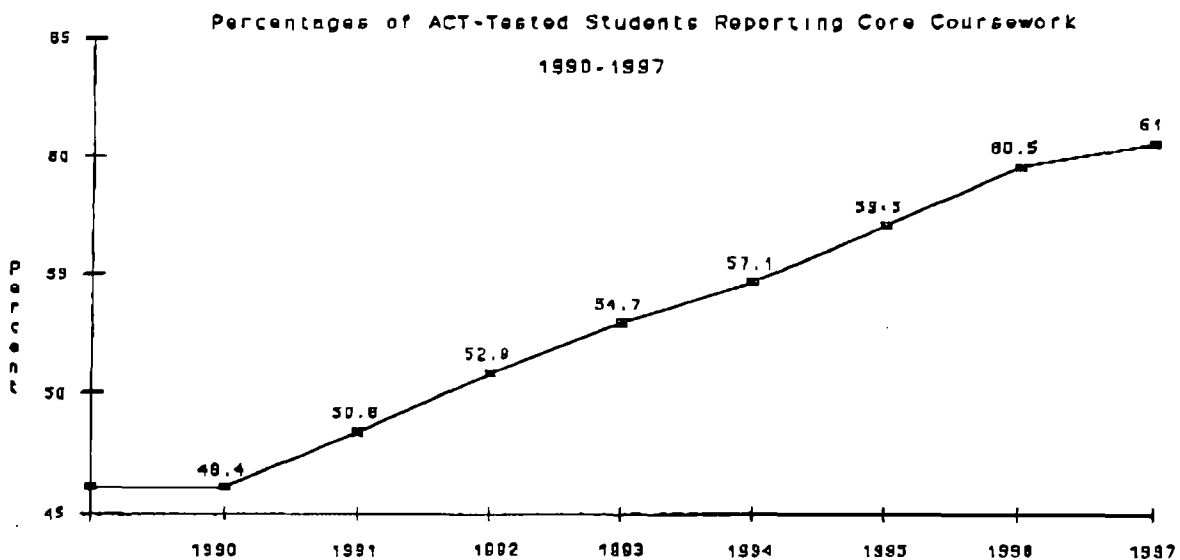
ACT research has shown consistently that higher-level preparation in the core courses is directly related to higher achievement on the ACT Assessment and, thus, to success in

(more)

ACT News -- Page 11
Embargoed for August 13

college. Large differences between the scores of those with core preparation and those with less are evident among all racial/ethnic groups and at all socioeconomic levels (See the ACT High School Graduating Class of 1997 National Report).

"Ten years ago, when we began reporting on students' preparation levels," Ferguson said, "the number of fully prepared college-bound students was disturbingly low. The last decade has seen a substantial increase in preparation --just over 23 percent -- but that increase now appears to be slowing."



"As a nation," Ferguson said, "We continue to send too many students off to college with inadequate preparation, one of the leading causes of their dropping out. The percentage

(more)

ACT News -- Page 12
Embargoed for August 13

of freshmen who fail to return for their sophomore year continues to grow, and the percentage of students who graduate within five years continues to shrink, and here is one reason why.

"We still have a long way to go in strengthening students' preparation for life after high school. We need to start earlier -- at least as early as the eighth grade -- in providing students with both career and college planning information so they can make better decisions regarding their high school courses."

#



UNITED STATES DEPARTMENT OF EDUCATION

OFFICE OF THE SECRETARY

FAX TRANSMITTAL

TO: Mike Cohen / Bill Kincaid

ORGANIZATION: DPC

PHONE NUMBER: _____

FAX NUMBER: _____

FROM: Kevin Sullivan

PHONE NUMBER: 401-0831

FAX NUMBER: ~~202-401-3000~~

MESSAGE: N AEP Draft for
W. H. Radio address
Sent to June in
speech writing
3 pages

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Our mission is to ensure equal access to education and to promote educational excellence throughout the Nation.

Draft: Kevin Sullivan

President Clinton's Radio Address

All over America millions of young people are getting ready to go back school. In fact, this year we are once again setting a new national enrollment record -- 52.2 million young people. While many of our schools are crowded, two recent education reports tell us that we are headed in the right direction in our efforts to establish national standards of excellence.

A few days ago the College Board released its annual survey of incoming college freshmen. This report told us that SAT scores were up 3 points in math, the highest level since 1971, and unchanged in verbal. In the last five years, math scores have gone up ten points and verbal scores are up five points. ACT scores for college bound seniors are also up in four of the last five years. This is steady progress. The SAT report also told us that many more minorities are taking the test, and that 25 percent of all incoming freshmen are taking the tough Advanced Placement courses. But we need to be worried about the grade inflation factor as well. An "A" really needs to stand for excellence.

Yesterday, the national assessment for educational progress (NAEP) -- the nation's report card -- released its long term trend report on how we are doing in educating our children in four of the key basics -- reading, writing, math and science. Fourteen years ago, after the release of the "Nation at Risk" report, which warned us about a rising tide of mediocrity in our schools, this nation began an all out effort to improve American education. We called for high standards, better trained teachers, and asked all of our young people to take the tough "core" courses that can prepare them for college.

The NAEP report tells us the progress we have made in achieving some of these goals, and where we need to improve. We are making solid progress, for example, in teaching our young people math and science at every age level. This is very good news. Fifty percent of all young people are now taking Algebra II, up from 37 percent in 1978, and 56 percent of all young people are now taking Chemistry, a 16 point increase since 1986.

The report also tells that we are doing a much better job at teaching the basics at the elementary level -- something confirmed by a recent international test -- the Third International Math and Science Test -- but that we start to lose some of those gains in middle school.

The NAEP test also tells us that we are holding our own when it comes to reading and that a lot more young people who want to go to college need to work harder if they want to become good writers. But holding our own isn't good enough when it comes to making sure that all of our young people are reading well and independently by the end of the third grade. This is why I have asked all Americans to join in the *America Reads Challenge*, a national effort to recruit one million volunteer reading tutors.

There is other important news in this NAEP report that deserves the attention of America's parents and teachers. For many years the academic gap between white and black students was very significant and troubling. We were able to close part of that gap in the 1980's and then it widen again. Yesterday's report tells us that while we are holding our own, we really do have to work harder at helping all of our children achieve excellence.

Finally, the NAEP report tells us something that is very significant. More of our young people are learning more complex subject matter. Instead of being satisfied with learning just the minimum many more young people are stretching their minds. Our message of changing expectations and reaching for higher standards is getting through.

Yet, we really cannot be satisfied with the progress we are making. The world is changing and all of our young people deserve the best education possible. This is why I have called for national standards of excellence and want to encourage every child in America to take voluntary, national tests in 4th grade reading and 8th grade math. These voluntary tests will do something that other tests don't do. They will give every parent a way to measure their child's progress against national and international standards. I believe that these tests are going to get parents excited and involved at the local level in the same way that the, "*Nation at Risk*" report woke up America to the fact that our nation's schools were sliding toward mediocrity.

NATIONAL CENTER FOR EDUCATION STATISTICS

Embargoed Press Briefing

NAEP 1996 Trends in Academic Progress

Office of Educational Research and Improvement
U.S. Department of Education
Capitol Place
80 F Street, NW Room 100

August 29, 1997

DATA PRESENTATION

Pascal D. Forgione, Jr.
Commissioner
National Center for Education Statistics

COMMENTARY

Marshall Smith
Acting Deputy Secretary
U.S. Department of Education

Fannie L. Simmons
Member, National Assessment Governing Board
Math Coordinator
District 5 of Lexington/Richland County
Ballentine, South Carolina

QUESTIONS AND ANSWERS

Subject Areas Assessed by NAEP¹

NATIONAL NAEP ²		STATE NAEP ³	
Main Assessment:		Long-Term Trend	
Year	Assessment	Assessment	Grades
1988	Civics, Reading, Writing	Reading, Writing	Grades 4, 8 Grade 8
1997	Arts (Grade 8)		
1996	Mathematics, Science	Mathematics, Science, Reading, Writing	Mathematics, Science Grades 4, 8 Grade 8*
1994	Geography, U.S. History, Reading	Mathematics, Science, Reading, Writing	Reading ³ Grade 4
1992	Mathematics, Reading, Writing	Mathematics, Science, Reading, Writing	Mathematics ³ Reading ³ Grades 4, 8 Grade 4
1990	Mathematics, Science, Reading	Mathematics, Science, Reading, Writing	Mathematics ³ Grade 8
1988	Civics, Document Literacy ² , Geography ² , U.S. History, Reading, Writing	Civics ¹ , Mathematics, Science, Reading, Writing	<i>Since 1994, states have assessed nonpublic schools as well as public schools.</i> *Department of Defense schools were assessed at Grades 4 and 8.
1986	Computer Competence, U.S. History ² , Literature ² , Mathematics, Science, Reading	Mathematics, Science, Reading ⁴	
1984	Reading, Writing	Reading, Writing	
1981-82 ⁵	Mathematics, Science, Citizenship / Social Studies ¹	Mathematics ¹ , Science ¹	
1979-80	Reading / Literature, Art	Reading ¹	
1978-79	Art, Music, Writing		
1977-78	Consumer Skills ² , Mathematics	Mathematics ¹	
1976-77	Basic Life Skills ² , Science	Science ¹	
1975-76	Citizenship / Social Studies, Mathematics ²	Citizenship / Social Studies ¹	
1974-75	Art, Index of Basic Skills, Reading	Reading ¹	
1973-74	Career and Occupational Development, Writing		
1972-73	Mathematics, Science	Mathematics ¹ , Science ¹	
1971-72	Music, Social Studies		
1970-71	Literature, Reading	Reading ¹	
1969-70	Citizenship, Science, Writing	Science ¹	

¹ This assessment appears in reports as part of long-term trend. Note that the Civics assessment in 1988 is the third point in trend for Citizenship / Social Studies in 1981-1982 and in 1975-1976. There are no points on the trend line for Writing before 1984.

² This was a small, special-interest assessment administered to limited national samples at specific grades or ages and was not part of a main assessment.

Note that this chart includes only assessments administered to in-school samples; not shown are several special NAEP assessments of adults.

³ State assessments in 1990-1994 were referred to as Trial State Assessments (TSAs).

⁴ The 1986 long-term trend Reading assessment is not included on the trend line in reports because the results for this assessment were unusual. Further information on this reading anomaly is available in Beaton and Zwick (1990).

⁵ Explanation of format for Year column: Before 1984, the main NAEP assessments were administered in the fall of one year through the spring of the next. Beginning with 1984, the main NAEP was administered after the new year in the winter, although the assessments to measure long-term trend continued with their traditional administration in fall, winter, and spring. Because the main assessment is the largest component of NAEP, beginning with 1984 we have listed its administration year rather than the two years over which the trend continued to be administered. Note also that the state component is administered at essentially the same time as the main NAEP.

NAEP 1996 Trends in Academic Progress Main Points

1. No significant changes in performance between 1994 and 1996.

Between 1994 and 1996, there were no changes in average academic performance in any subject tested—science, mathematics, reading, or writing. This was true regardless of age, grade, or population subgroup (race/ethnicity or gender). We would not expect to observe much change in such a short period, as educational progress takes time.

2. Long-term improvements in science, mathematics, and reading performance.

Since the initial administration of the long-term trend assessment in the early 1970s, there have been overall trends toward higher performance in science, mathematics, and reading.

- Science. Scores generally declined through the 1970s, but then turned upward during the 1980s. These improvements have been sustained during the 1990's.
- Mathematics. Mathematics scores have trended upward for all age groups since the earliest assessment of this subject in 1973.
- Reading. Reading scores have trended upward since 1971, but the amount of change has been slight.

3. In writing, improvement for 4th- and 8th-graders since 1990, but scores of 11th graders have declined somewhat over the years.

Differences in revising strategies between the older and younger grades may be associated with differential performance in writing. Students at grades 4 and 8 reported they increased the extent to which they do "process writing" techniques, while 11th graders did not report any increase in these. For example, higher percentages of 4th graders in 1996 than in 1984 reported that more than half the time they take out parts of drafts they don't like, and higher percentages of 8th graders reported moving sentences and paragraphs within their compositions (also more than half the time), while the frequency for 17-year-olds did not change for these revising strategies. On the other hand, the percentage of 17-year-olds who reported rewriting their papers more than half the time declined, a change not reported by the younger age groups.

4. Improvements in academic performance at all age groups, and 9-year-olds have made the most consistent improvement.

The performance scores of 9-year-olds in 1996 were higher than those in the early 1970s in science, mathematics, and reading; their writing performance has also improved since 1990. The performance of 13-year-olds was higher in mathematics and reading in 1996 compared with the earliest assessment, and their writing score was higher than in 1990. Seventeen-year-olds, on the other hand, had a lower score in science in 1996 than in the earliest assessment year, though there has been improvement during the 1990s. Eleventh graders have declined in writing performance since 1984, however.

Many factors may account for the greater consistency of improvement in the younger groups over the long term. While some of these factors may not be measured by NAEP, data are collected on various relevant background characteristics. For example, the percentage of 17-year-olds who report that they read for fun daily has declined, and the percentage who report never reading for fun has increased. These patterns were not observed for the younger age groups. In addition, the percentages of 9- and 13-year-olds who report reading more than 20 pages per day in school and for homework have increased, while no change was reported by 17-year-olds.

Finally, changes in television differed between 17-year-olds and the younger age groups. Lower percentages of 9- and 13-year-olds reported watching 6 or more hours of television per day in 1996 than in 1982, while there was a small increase in this frequency of television watching reported by 17-year-olds. (The percentage of 17-year-olds who reported watching 6 or more hours of television in 1996, however, was less than that for the younger age groups.)

Table 8.2a
**Teachers' Comments on Completed Papers at
Grades 8 and 11, 1984 and 1996**


Students' Reports on How Often
Teachers Comment on Aspects of
Their Papers

	Grade	Year	More Than Half the Time		About Half the Time		Less Than Half the Time		Never or Hardly Ever	
			Percent of Students	Average Scale Score	Percent of Students	Average Scale Score	Percent of Students	Average Scale Score	Percent of Students	Average Scale Score
Ideas in paper	8	1996	47(1.9)	262(2.4)	23(1.5)	260(3.0)	17(1.2)	264(3.0)	13(0.9) *	262(2.5)
		1984	41(1.8)	267(3.6)	23(1.3)	268(3.2)	17(1.4)	269(3.4)	19(1.4)	267(3.8)
	11	1996	49(1.9) *	284(2.1)	24(1.6)	280(2.4)	17(1.1) *	286(3.6)	10(1.1)	280(5.2)
		1984	40(1.8)	289(2.6)	23(2.0)	283(3.3)	24(2.3)	288(4.4)	14(1.6)	288(5.9)
Way ideas explained	8	1996	45(2.2) *	262(2.2)	23(1.8)	262(3.4)	20(1.1)	264(3.6)	13(1.0)	260(3.6)
		1984	37(1.7)	266(3.5)	25(1.9)	267(3.5)	21(1.9)	267(3.3)	17(1.9)	271(5.0)
	11	1996	47(2.2)	285(2.2)	25(1.8)	281(3.1)	17(1.0)	281(2.5)	11(0.8)	281(5.6)
		1984	40(2.2)	287(2.6)	25(2.0)	282(4.1)	23(2.1)	292(3.1)	13(1.5)	290(5.1)
Way feelings expressed	8	1996	40(2.2)	262(2.7)	22(1.5)	263(3.3)	19(1.2)	262(4.0)	19(1.1) *	262(2.8)
		1984	33(2.2)	265(3.4)	21(2.3)	268(4.0)	21(2.1)	271(3.8)	26(1.8)	266(3.1)
	11	1996	40(1.9) *	283(2.0)	20(1.4)	281(2.7)	22(1.3)	285(2.8)	18(0.8)	284(3.7)
		1984	31(2.3)	285(3.1)	25(1.8)	285(4.3)	25(1.7)	289(3.3)	19(1.6)	292(3.9)
Organization	8	1996	47(2.0)	262(2.0)	21(1.2)	259(3.5)	17(1.1)	265(3.2)	15(0.9)	260(3.6)
		1984	43(2.0)	267(3.0)	22(1.3)	266(3.4)	16(1.2)	270(3.2)	19(2.0)	267(3.7)
	11	1996	46(1.8)	283(2.1)	23(1.5)	280(2.5)	18(1.3)	283(3.4)	13(0.8)	288(5.4)
		1984	40(2.1)	288(3.0)	21(1.8)	287(4.0)	22(1.6)	286(3.3)	17(1.4)	289(6.3)

Standard errors of the estimated percentages and scale scores appear in parentheses.

* Indicates that the percentage or average scale score in 1996 is significantly different than that in 1984.

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

Table 8.4a

Use of Specific Revising and Editing Strategies at Grades 4, 8 and 11, 1984 and 1996



Students' Reports on How Often
They Use Strategies

	Grade	Year	More Than Half the Time		About Half the Time		Less Than Half the Time		Never or Hardly Ever	
			Percent of Students	Average Scale Score	Percent of Students	Average Scale Score	Percent of Students	Average Scale Score	Percent of Students	Average Scale Score
Correct spelling	4	1996	78(1.6)	209(2.4)	9(0.7)	199(4.7)	7(1.1)	206(5.5)	7(0.7)	198(6.4)
		1984	75(1.7)	206(2.1)	10(1.3)	203(7.0)	6(1.1)	***(***)	9(0.9)	***(***)
	8	1996	77(1.4)	266(1.6)	12(0.8)	255(3.8) *	6(0.8)	265(6.2)	5(0.6)	***(***)
		1984	75(1.7)	267(2.2)	12(1.3)	273(5.3)	6(1.1)	***(***)	7(1.2)	***(***)
	11	1996	78(1.8)	285(1.3) *	12(1.2)	274(4.1)	6(0.7)	276(5.5)	5(0.6)	***(***)
		1984	76(2.4)	294(2.4)	10(1.3)	***(***)	9(1.5)	***(***)	5(1.4)	***(***)
Correct punctuation	4	1996	69(1.2)	209(2.5)	11(1.1)	208(3.6)	9(0.8)	202(4.8)	12(1.0)	201(3.7)
		1984	65(2.5)	206(2.7)	12(1.7)	206(5.9)	10(1.4)	200(3.4)	14(2.1)	196(4.8)
	8	1996	70(1.3)	266(1.6)	13(1.0)	257(3.0)	10(0.9)	259(4.2)	7(0.7)	251(5.3)
		1984	69(2.0)	268(2.1)	12(1.3)	270(5.7)	10(1.4)	***(***)	9(1.6)	***(***)
	11	1996	71(1.6)	284(1.6) *	13(1.1)	275(3.7)	10(1.0)	282(3.4)	5(0.6)	278(6.1)
		1984	70(2.7)	294(2.4)	12(1.3)	281(6.5)	11(1.9)	***(***)	7(1.5)	***(***)
Correct grammar	4	1996	57(1.5)	210(2.7)	14(1.2)	209(4.1)	10(1.0)	209(4.2)	18(1.3) *	197(4.0)
		1984	51(2.1)	205(2.6)	11(1.2)	209(6.5)	9(0.9)	***(***)	29(2.1)	201(3.9)
	8	1996	69(1.3)	267(1.7)	14(0.9)	255(3.1) *	10(0.7)	257(4.6)	7(0.6)	249(5.9)
		1984	65(2.2)	269(2.4)	17(1.9)	268(3.7)	10(1.5)	***(***)	8(1.4)	***(***)
	11	1996	72(1.3)	284(1.6) *	15(1.0)	277(2.9)	9(0.9)	279(3.7)	5(0.5)	***(***)
		1984	70(2.3)	294(2.5)	13(1.3)	286(5.0)	11(1.7)	***(***)	6(1.0)	***(***)
Change words	4	1996	70(1.3) *	209(2.8)	13(1.0)	210(3.6)	8(0.8)	202(4.9)	9(1.0) *	196(5.5)
		1984	62(2.2)	206(2.4)	15(1.4)	206(5.2)	9(1.2)	198(4.7)	14(1.2)	196(5.7)
	8	1996	71(1.3)	267(1.9)	16(1.2)	259(2.3)	7(0.7)	250(5.3)	6(0.9)	238(6.0)
		1984	65(2.3)	271(2.7)	16(1.3)	266(3.8)	11(1.6)	***(***)	9(1.3)	***(***)
	11	1996	74(1.6)	286(1.7) *	17(1.4)	275(3.1)	5(0.5)	269(3.4)	4(0.6)	***(***)
		1984	71(2.5)	295(2.5)	16(2.0)	283(5.0)	8(1.3)	***(***)	4(1.1)	***(***)

Standard errors of the estimated percentages and scale scores appear in parentheses.

* Indicates that the percentage or average scale score in 1996 is significantly different than that in 1984.

*** Sample size is insufficient to permit a reliable estimate.

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

Table 8.4b

Use of Specific Revising and Editing Strategies at Grades 4, 8 and 11, 1984 and 1996



Students' Reports on How Often
They Use Strategies

	Grade	Year	More Than Half the Time		About Half the Time		Less Than Half the Time		Never or Hardly Ever	
			Percent of Students	Average Scale Score	Percent of Students	Average Scale Score	Percent of Students	Average Scale Score	Percent of Students	Average Scale Score
Add ideas or information	4	1996	67(1.2)	207(2.4)	14(1.0)	209(4.4)	11(1.0)	208(3.2)	8(0.8)	201(6.3)
		1984	61(2.0)	204(2.5)	17(1.5)	209(4.8)	10(1.5)	203(7.1)	12(1.3)	194(5.9)
	8	1996	67(1.6)	267(2.0)	21(1.4)	258(3.0)	6(0.8) *	254(6.0)	6(0.6)	243(5.1)
		1984	60(2.8)	270(2.6)	22(1.9)	269(3.3)	12(1.9)	***(***)	7(1.3)	***(***)
	11	1996	71(1.5)	286(1.4)	19(1.2)	276(3.0)	6(0.7)	268(6.6)	4(0.6)	***(***)
		1984	70(2.0)	293(2.6)	19(1.3)	289(4.5)	8(1.4)	***(***)	4(0.9)	***(***)
Take out parts you don't like	4	1996	52(1.5) *	208(2.6)	13(1.3)	213(4.8)	13(1.1)	209(4.0)	22(1.2) *	201(3.1)
		1984	45(2.1)	205(3.1)	13(1.4)	204(5.5)	11(1.2)	206(4.8)	32(2.0)	202(3.3)
	8	1996	60(1.6)	268(2.1)	21(1.5)	260(3.1)	12(0.9)	253(4.1)	8(1.0)	242(5.9)
		1984	56(2.2)	271(2.7)	20(1.8)	267(3.3)	13(1.8)	263(4.2)	11(1.5)	***(***)
	11	1996	65(1.8)	287(1.5) *	20(1.3)	276(3.1)	9(1.0)	273(3.8)	6(0.9)	267(6.2)
		1984	58(3.0)	295(2.5)	23(2.5)	285(5.2)	11(1.4)	285(5.7)	7(1.2)	***(***)
Move sentences or paragraphs	4	1996	40(1.4)	204(3.4)	19(1.2)	213(2.9)	14(1.3)	213(4.7)	27(1.2)	205(2.6)
		1984	44(2.0)	202(3.4)	16(1.3)	205(4.9)	12(1.5)	207(5.5)	27(1.8)	206(3.5)
	8	1996	39(1.6) *	268(2.4)	26(1.5)	264(2.0)	20(1.2)	262(3.6)	15(1.1) *	250(3.7)
		1984	30(2.0)	272(3.0)	28(2.2)	268(3.5)	19(1.8)	268(3.4)	23(2.4)	258(3.6)
	11	1996	45(1.8)	289(1.6)	25(1.3)	279(3.3) *	18(1.1)	278(3.0)	12(0.9)	273(3.0)
		1984	46(2.6)	295(3.2)	24(1.9)	292(3.5)	17(2.0)	287(5.7)	13(1.8)	276(4.6)
Rewrite most of the paper	4	1996	38(1.7)	205(2.6)	12(1.0)	207(4.6)	14(1.1)	210(4.3)	37(1.4)	209(2.7)
		1984	36(1.7)	201(2.7)	13(1.3)	207(5.2)	15(1.3)	202(4.2)	37(1.8)	207(3.1)
	8	1996	43(1.5)	262(1.8)	14(1.2)	263(2.4)	20(0.9)	266(2.8)	23(1.2)	261(2.7)
		1984	40(1.8)	268(2.7)	15(1.8)	268(3.8)	22(1.7)	271(3.3)	23(2.0)	262(4.6)
	11	1996	34(1.5) *	279(2.9) *	18(1.1)	283(4.3)	25(1.1)	285(3.2)	24(1.1) *	285(3.1)
		1984	44(2.6)	292(2.0)	18(1.4)	290(5.7)	21(2.3)	295(5.6)	17(1.6)	282(4.8)
Throw out and start over	4	1996	28(1.5)	199(2.5)	10(0.9)	207(6.6)	15(1.2)	213(4.4)	48(1.9) *	211(2.3)
		1984	34(2.2)	198(3.4)	13(1.3)	206(4.6)	14(1.1)	205(5.2)	40(2.2)	208(2.6)
	8	1996	22(1.0) *	255(3.3)	17(1.1)	263(3.1)	25(1.2) *	265(2.3)	36(1.5)	266(2.0)
		1984	33(2.0)	266(3.6)	17(1.9)	266(2.9)	19(1.5)	271(3.8)	31(2.5)	267(4.3)
	11	1996	16(1.4) *	274(4.1)	14(0.9)	276(2.9)	29(1.4)	286(3.4)	41(1.5) *	286(2.5)
		1984	25(1.8)	286(3.4)	14(1.9)	285(5.6)	29(2.0)	294(4.1)	32(2.1)	293(4.3)

Standard errors of the estimated percentages and scale scores appear in parentheses.

* Indicates that the percentage or average scale score in 1996 is significantly different than that in 1984.

*** Sample size is insufficient to permit a reliable estimate.

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

Table 8.7**Personal and Social Uses of Writing at
Grades 4, 8, and 11, 1984 and 1996**

Students' Reports on How Often
They Engaged in Various Kinds
of Writing Activities

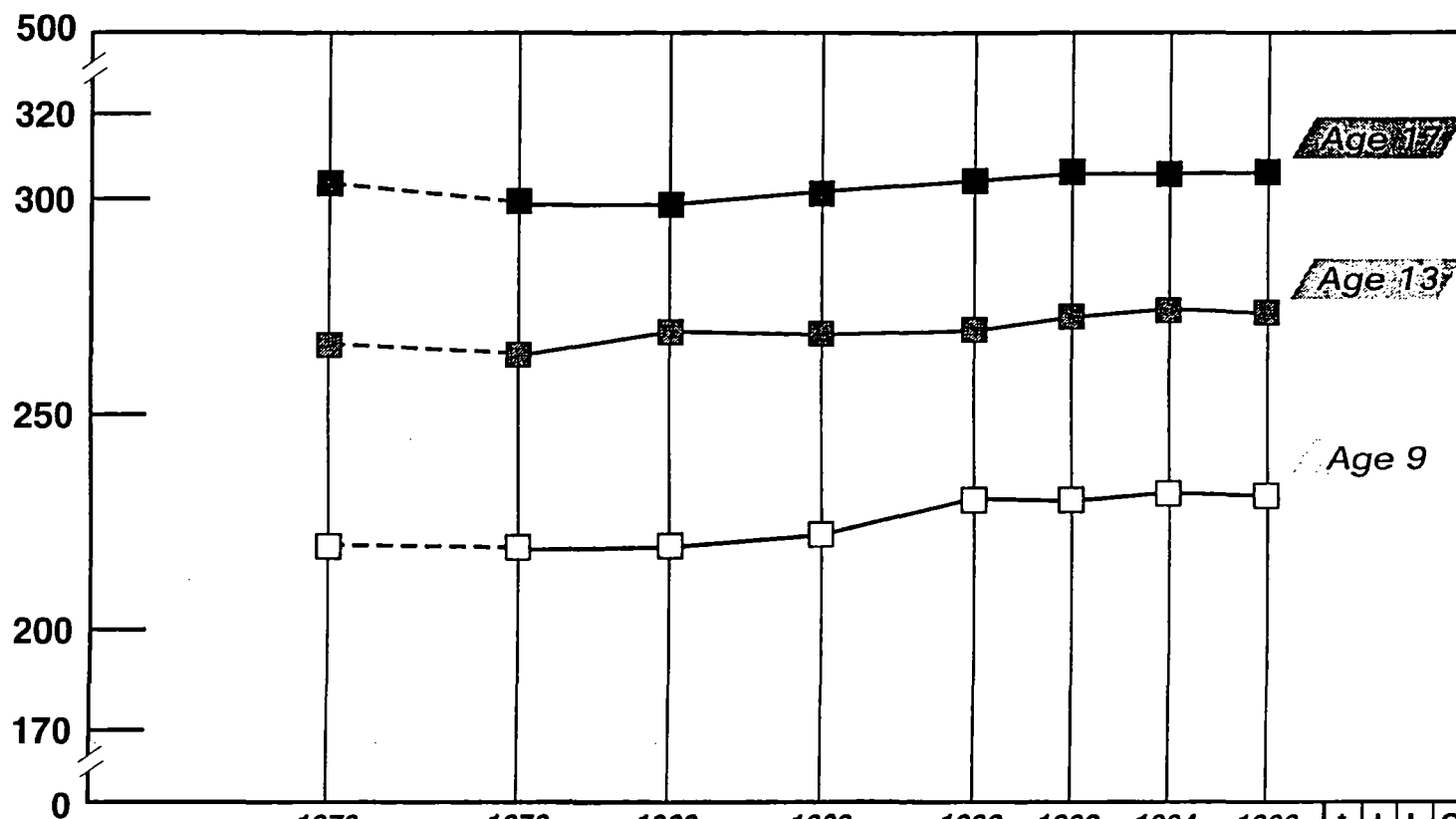
	Grade	Year	At Least Once a Week		Once or Twice a Month		Never or Hardly Ever	
			Percent of Students	Average Scale Score	Percent of Students	Average Scale Score	Percent of Students	Average Scale Score
Write letters to friends or relatives	4	1996	35(1.3)	205(3.3)	35(1.2)	214(2.5)	30(1.2)	205(2.4)
		1984	33(2.1)	200(3.1)	37(2.1)	211(3.1)	31(1.6)	199(3.5)
	8	1996	46(2.0) *	269(1.8)	29(1.7) *	269(2.8)	25(1.3)	253(2.1)
		1984	37(2.0)	270(2.4)	37(2.0)	269(3.2)	26(1.5)	261(3.4)
	11	1996	36(1.5)	284(2.2) *	35(1.9)	284(2.6)	29(1.7)	278(2.7) *
		1984	36(1.8)	294(2.7)	38(1.9)	292(2.8)	26(2.1)	289(2.7)
Write notes and messages	4	1996	43(1.4)	211(2.2)	20(1.0)	210(2.6)	37(1.4)	203(2.4)
		1984	44(2.4)	205(3.4)	21(2.2)	202(4.2)	35(2.2)	203(3.1)
	8	1996	72(1.7)	271(1.6)	11(1.2)	255(3.5)	17(1.1)	246(2.6)
		1984	68(2.0)	271(2.5)	12(1.4)	263(4.9)	20(1.8)	256(4.4)
	11	1996	77(1.8)	286(1.8) *	14(1.5)	276(3.7)	10(1.1) *	265(4.9) *
		1984	74(1.9)	295(2.0)	11(1.2)	284(3.8)	15(1.4)	284(4.0)
Write stories or poems that are not schoolwork	4	1996	27(1.4)	204(3.0)	21(1.1)	213(2.9)	52(1.4)	208(2.0)
		1984	26(1.8)	197(4.5)	23(1.7)	208(5.1)	51(2.7)	206(2.6)
	8	1996	19(1.1) *	263(3.4)	22(1.3)	271(3.0)	60(1.7) *	263(1.6)
		1984	10(1.0)	266(5.7)	18(1.2)	271(3.8)	71(1.6)	266(2.6)
	11	1996	19(1.3) *	283(2.4)	22(1.4)	284(3.7)	59(1.6) *	281(2.1) *
		1984	12(1.1)	290(3.8)	18(1.8)	293(3.6)	71(1.4)	292(2.0)

Standard errors of the estimated percentages and scale scores appear in parentheses.

* Indicates that the percentage or average scale score in 1996 is significantly different than that in 1984.

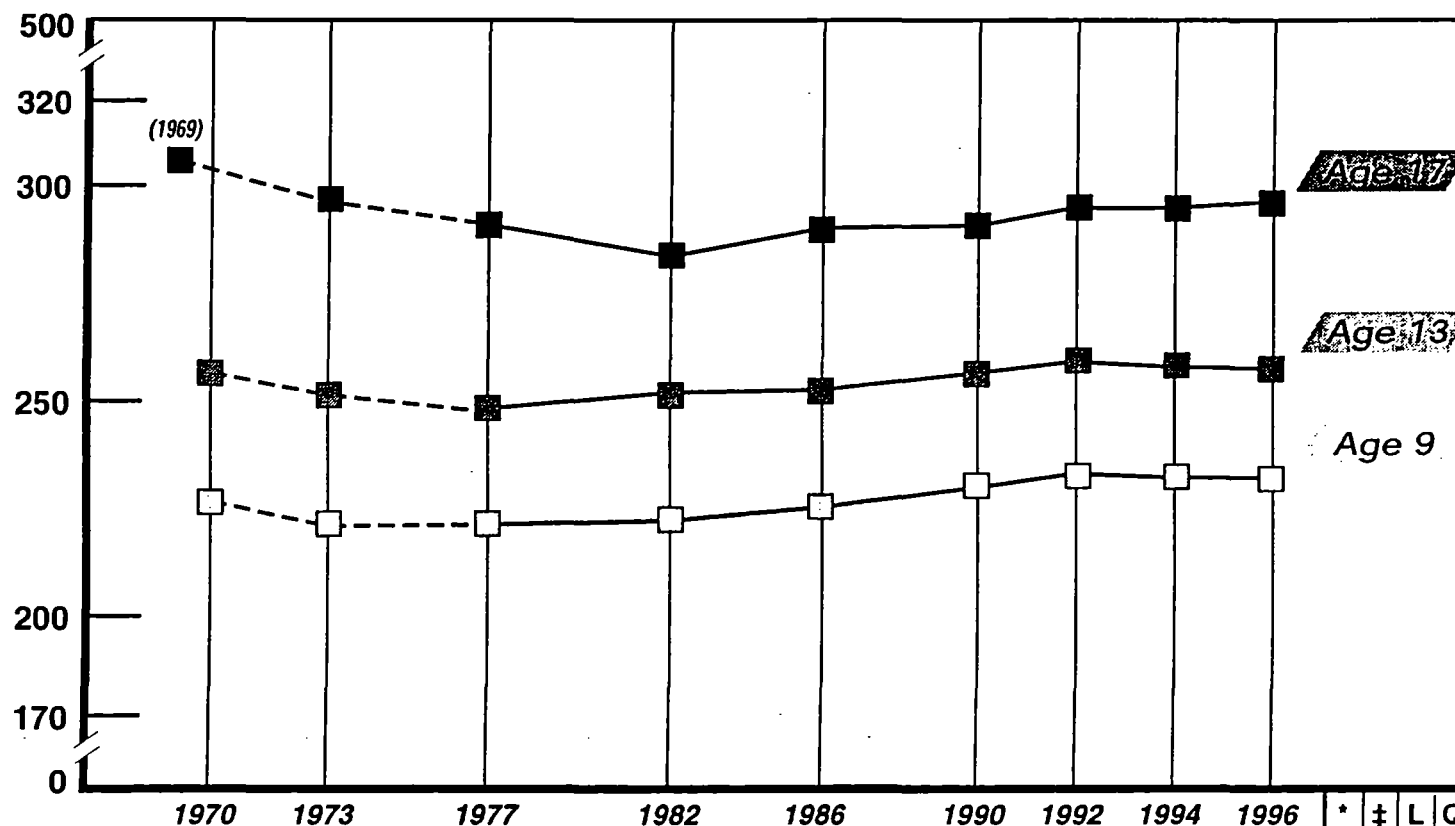
*SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

Trends in Average Mathematics Scale Scores for the Nation



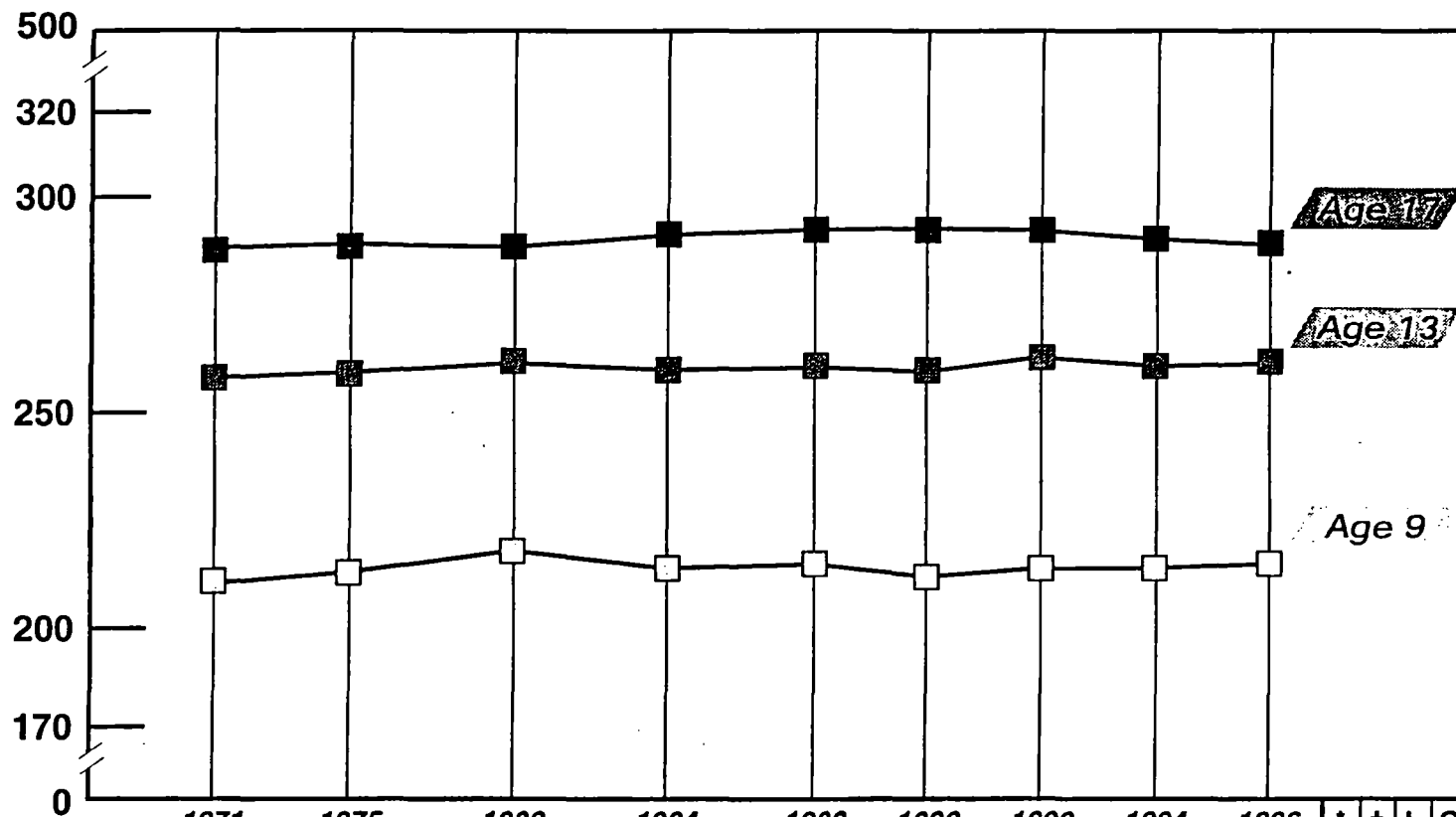
	1973	1978	1982	1986	1990	1992	1994	1996	*	‡	L	Q
Age 17	304(1.1)	300(1.0)	299(0.9)	302(0.9)	305(0.9)	307(0.9)	306(1.0)	307(1.2)			+	+
Age 13	266(1.1)	264(1.1)	269(1.1)	269(1.2)	270(0.9)	273(0.9)	274(1.0)	274(0.8)	+		+	
Age 9	219(0.8)	219(0.8)	219(1.1)	222(1.0)	230(0.8)	230(0.8)	231(0.8)	231(0.8)	+		+	+

Trends in Average Science Scale Scores for the Nation



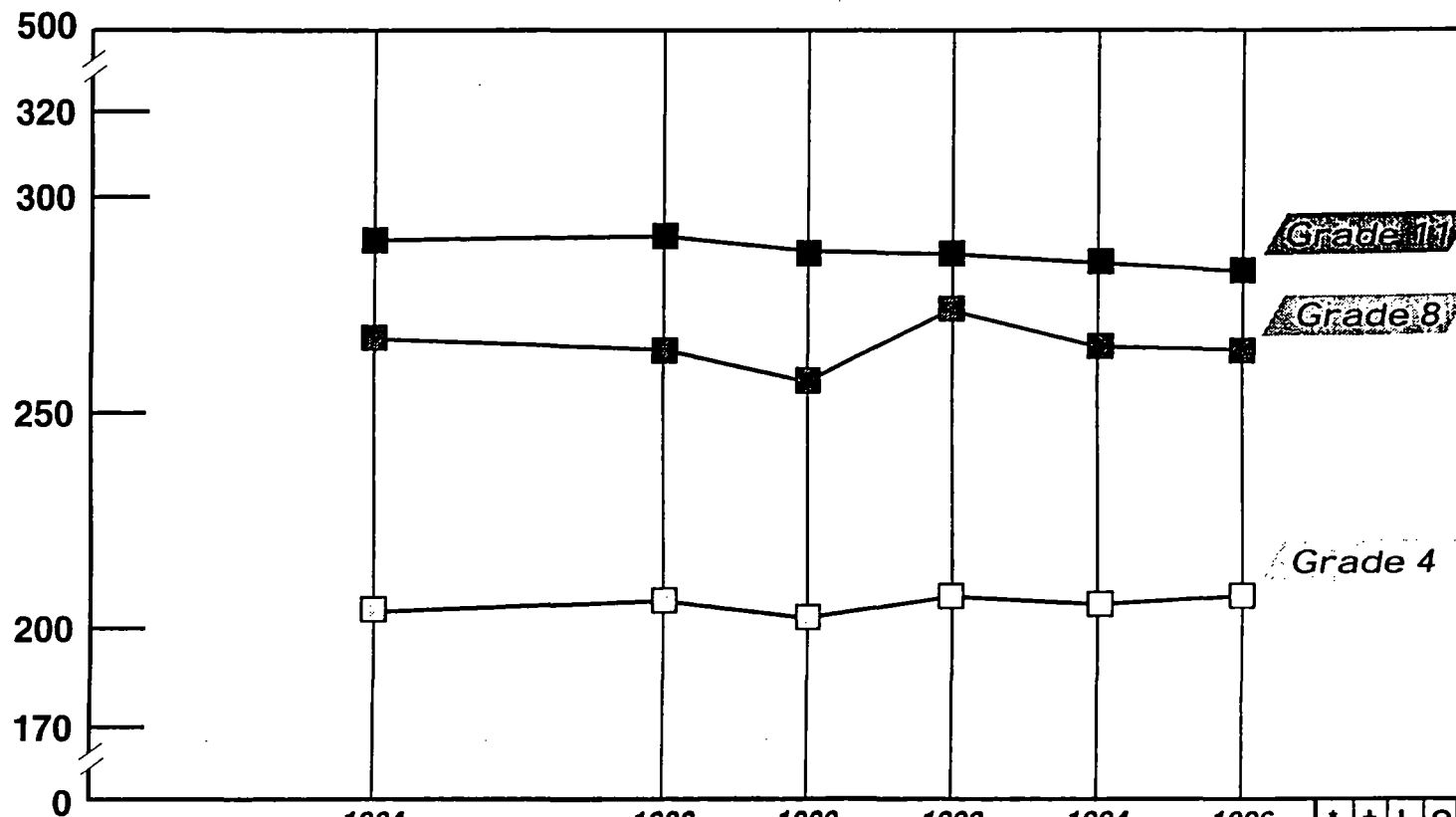
	1970	1973	1977	1982	1986	1990	1992	1994	1996	*	‡	L	Q
Age 17	305 (1.0)	296 (1.0)	290 (1.0)	283 (1.2)	289 (1.4)	290 (1.1)	294 (1.3)	294 (1.6)	296 (1.2)	-		-	+
Age 13	255 (1.1)	250 (1.1)	247 (1.1)	250 (1.3)	251 (1.4)	255 (0.9)	258 (0.8)	257 (1.0)	256 (1.0)			+	+
Age 9	225 (1.2)	220 (1.2)	220 (1.2)	221 (1.8)	224 (1.2)	229 (0.8)	231 (1.0)	231 (1.2)	230 (1.2)	+		+	+

Trends in Average Reading Scale Scores for the Nation



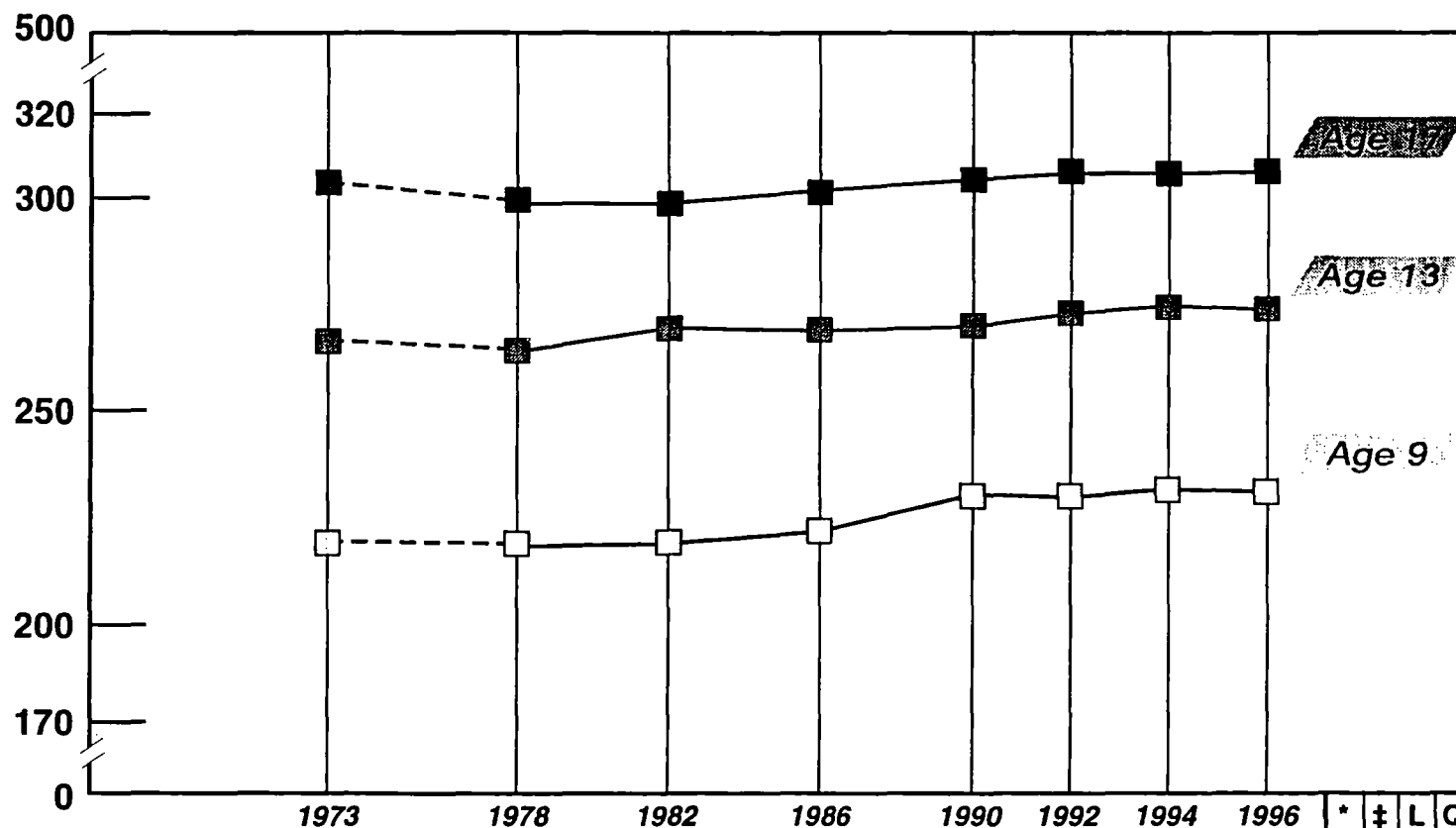
	1971	1975	1980	1984	1988	1990	1992	1994	1996	*	‡	L	Q
Age 17	285(1.2)	286(0.8)	286(1.2)	289(0.6)	290(1.0)	290(1.1)	290(1.1)	288(1.3)	287(1.1)			+	-
Age 13	255(0.9)	256(0.8)	259(0.9)	257(0.5)	258(1.0)	257(0.8)	260(1.2)	258(0.9)	259(0.9)	+		+	
Age 9	208(1.0)	210(0.7)	215(1.0)	211(0.7)	212(1.1)	209(1.2)	211(0.9)	211(1.2)	212(1.0)	+			-

Trends in Average Writing Scale Scores for the Nation



	1984	1988	1990	1992	1994	1996	*	‡	L	Q
Grade 11	290(1.6)	291(1.3)	287(1.0)	287(1.4)	285(1.2)	283(1.2)	-		-	
Grade 8	267(2.0)	264(1.3)	257(1.2)	274(1.3)	265(1.3)	264(1.0)				
Grade 4	204(1.5)	206(1.6)	202(1.5)	207(1.5)	205(1.6)	207(1.2)				

Trends in Average Mathematics Scale Scores for the Nation



Age 17

Age 13

Age 9

	1973	1978	1982	1986	1990	1992	1994	1996	*	‡	L	Q
Age 17	304(1.1)	300(1.0)	299(0.9)	302(0.9)	305(0.9)	307(0.9)	306(1.0)	307(1.2)			+	+
Age 13	266(1.1)	264(1.1)	269(1.1)	269(1.2)	270(0.9)	273(0.9)	274(1.0)	274(0.8)	+		+	
Age 9	219(0.8)	219(0.8)	219(1.1)	222(1.0)	230(0.8)	230(0.8)	231(0.8)	231(0.8)	+		+	+

5. Decrease in some gaps between race/ethnic groups and between genders over the years.

Science. The black-white gap has decreased for 9- and 13-year-olds, and there was an overall pattern of decreasing gaps between males and females at ages 13 and 17.

Mathematics. The gap between black and white students narrowed at all three ages, and the gap between white and Hispanic students narrowed at ages 13 and 17. The male-female gap narrowed for 17-year-olds, but widened slightly in favor of males at ages 9 and 13.

Reading. The black-white gap decreased at ages 9 and 17. The white-Hispanic gap was about the same in 1996 as in 1975. The male-female gap narrowed at ages 13 and 17.

Writing. There has been no significant change in gaps between race/ethnic groups or genders between 1984 and 1996.

Figure 1.6

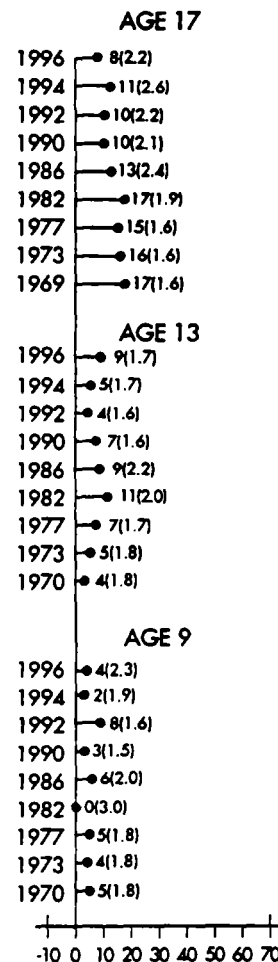
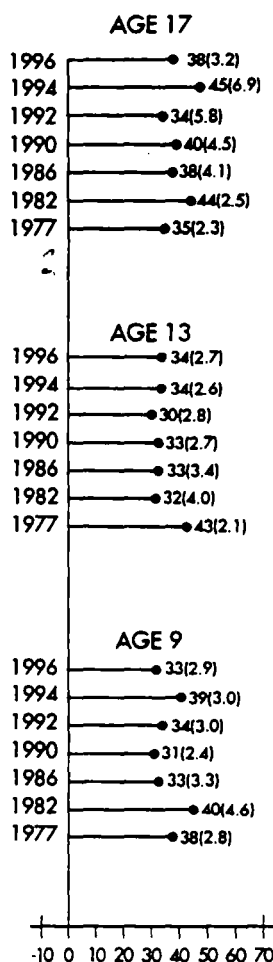
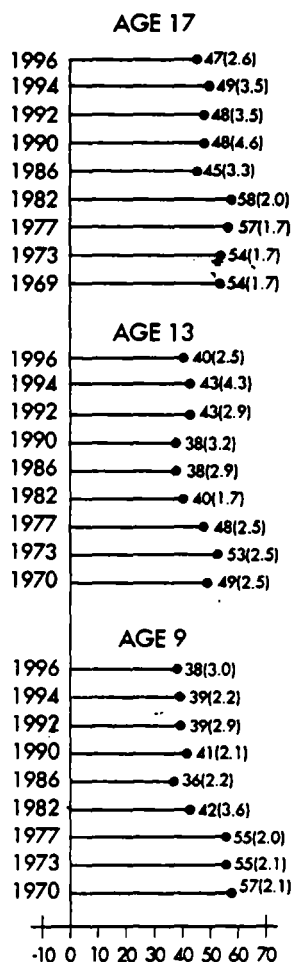
Trends in Differences in Average Science Scale Scores by Race/Ethnicity and Gender



White vs. Black Students
(White Minus Black)

White vs. Hispanic Students
(White Minus Hispanic)

Male vs. Female Students
(Male Minus Female)



	+	-	L	Q
Age 17				
Age 13				
Age 9				

	+	-	L	Q
Age 17				
Age 13				
Age 9				

	+	-	L	Q
Age 17				
Age 13				
Age 9				

Standard errors of the estimated scale score differences appear in parentheses.

* Indicates that the average scale score difference in 1996 is significantly larger (+) or smaller (-) than that in 1969-70 (for White vs. Black student and Male vs. Female student differences) or from 1977 (for White vs. Hispanic student differences).

‡ Indicates that the average scale score difference 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.

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

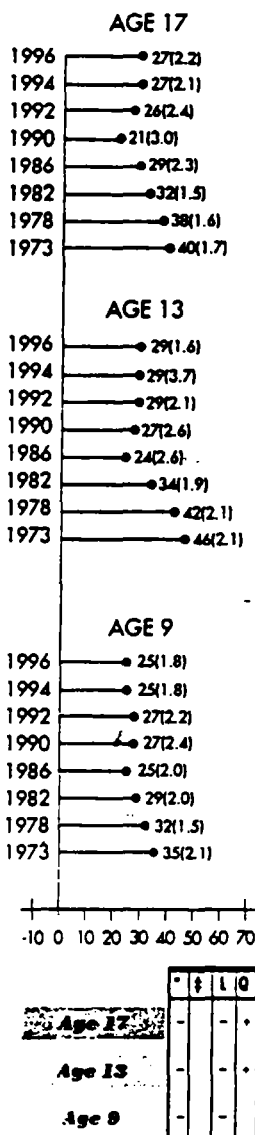
Figure 3.6

Trends in Differences in Average Mathematics Scale Scores by Race/Ethnicity and Gender



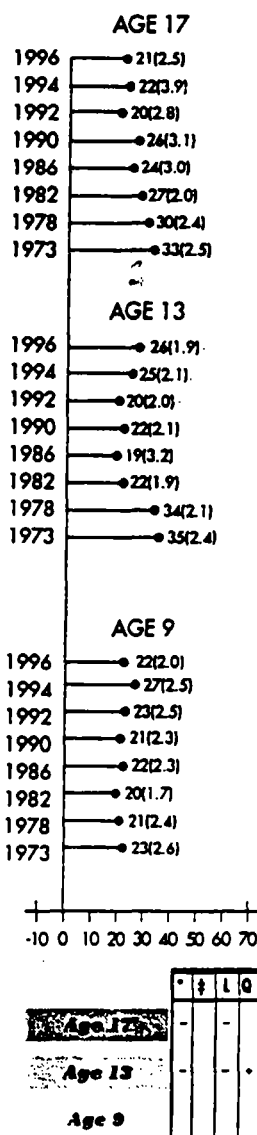
White vs. Black Students

(White Minus Black)



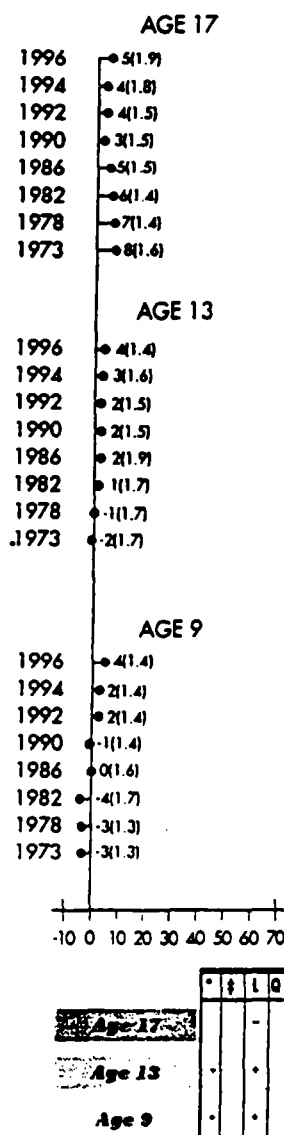
White vs. Hispanic Students

(White Minus Hispanic)



Male vs. Female Students

(Male Minus Female)



Standard errors of the estimated scale score differences appear in parentheses.

* Indicates that the average scale score difference in 1996 is significantly larger (+) or smaller (-) than that in 1973.

† Indicates that the average scale score difference in 1996 is significantly larger (+) or smaller (-) than that in 1994.

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

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

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

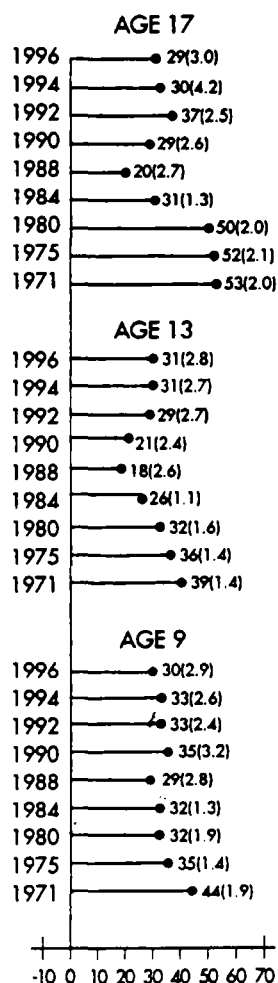
Figure 5.6

Trends in Differences in Average Reading Scale Scores by Race/Ethnicity and Gender



White vs. Black Students

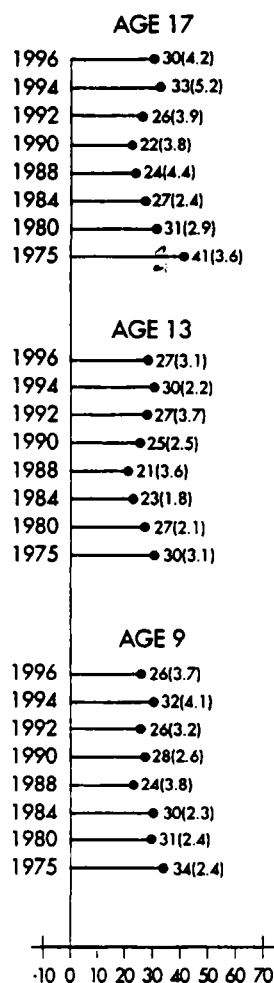
(White Minus Black)



	*	‡	L	Q
Age 17	-	-	+	
Age 13			-	+
Age 9			-	

White vs. Hispanic Students

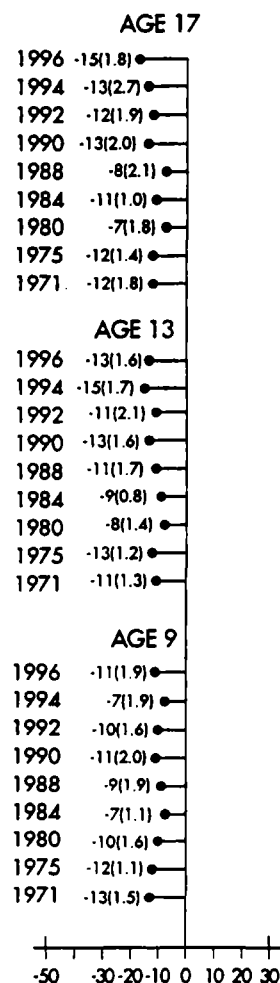
(White Minus Hispanic)



	*	‡	L	Q
Age 17				+
Age 13				
Age 9				

Male vs. Female Students

(Male Minus Female)



	*	‡	L	Q
Age 17				-
Age 13				-
Age 9				

Standard errors of the estimated scale score differences appear in parentheses.

* Indicates that the average scale score difference in 1996 is significantly larger (+) or smaller (-) than that in 1971 (for White vs. Black student and Male vs. Female student differences) or in 1975 (for White vs. Hispanic student differences).

‡ Indicates that the average scale score difference 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.

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

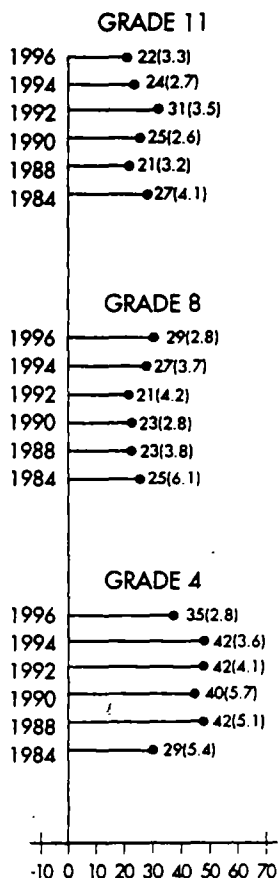
Figure 7.6

Trends in Differences in Average Writing Scale Scores by Race/Ethnicity and Gender



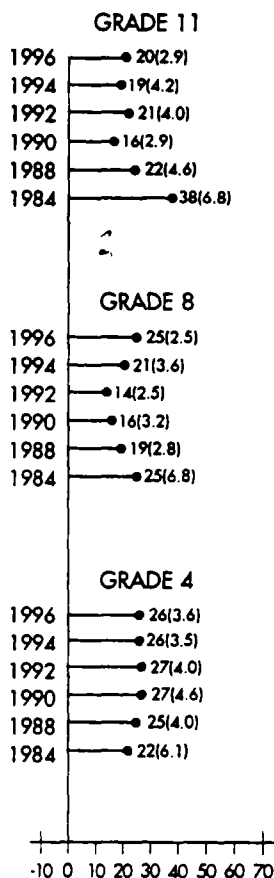
White vs. Black Students

(White Minus Black)



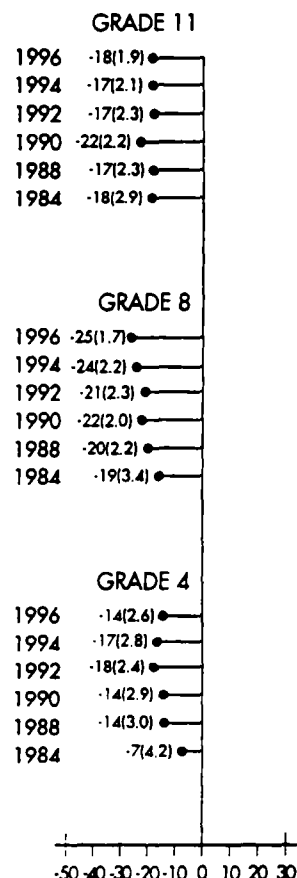
White vs. Hispanic Students

(White Minus Hispanic)



Male vs. Female Students

(Male Minus Female)



	*	‡	L	Q
Grade 11				
Grade 8				
Grade 4				

	*	‡	L	Q
Grade 11				
Grade 8				
Grade 4				

	*	‡	L	Q
Grade 11				
Grade 8				
Grade 4				

Standard errors of the estimated scale score differences appear in parentheses.

* Indicates that the average scale score difference in 1996 is significantly larger (+) or smaller (-) than that in 1984.

‡ Indicates that the average scale score difference 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.

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

Figure 1.4

Trends in Average Science Scale Scores by Race/Ethnicity, 1969-70 to 1996

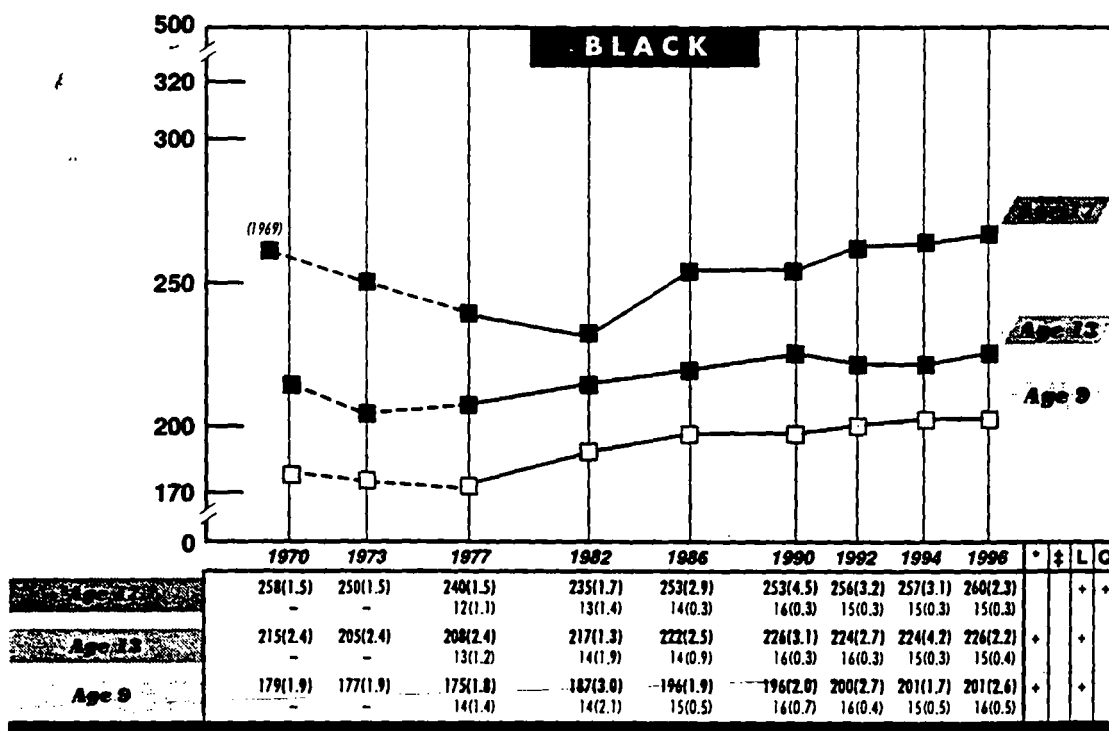
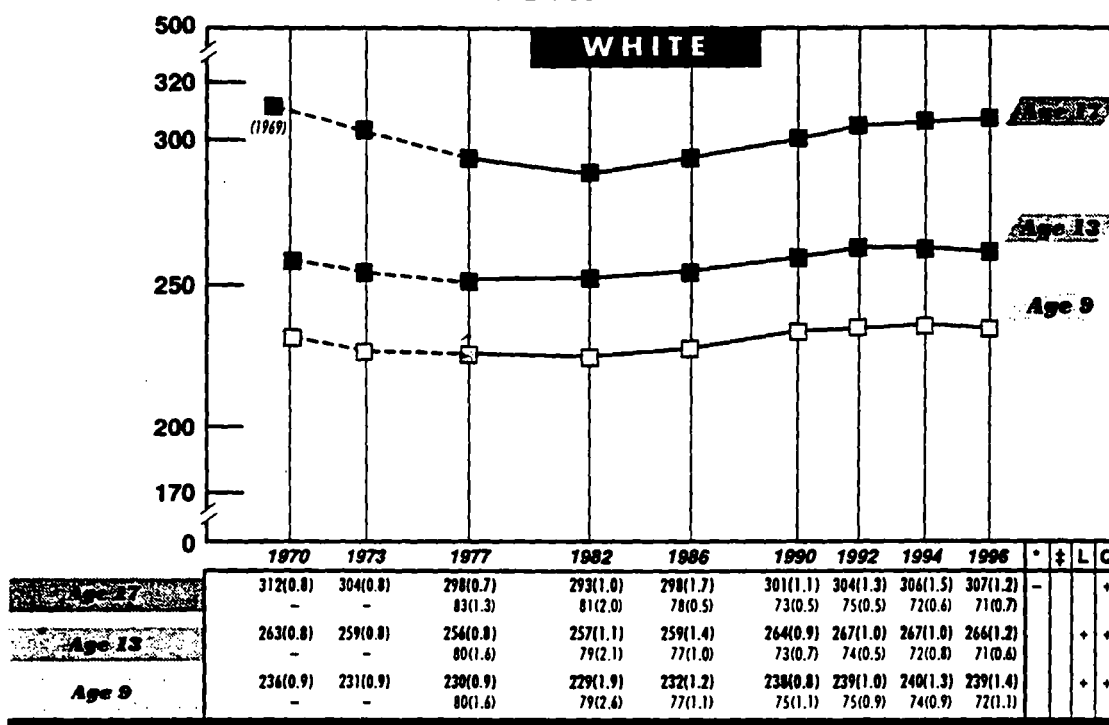
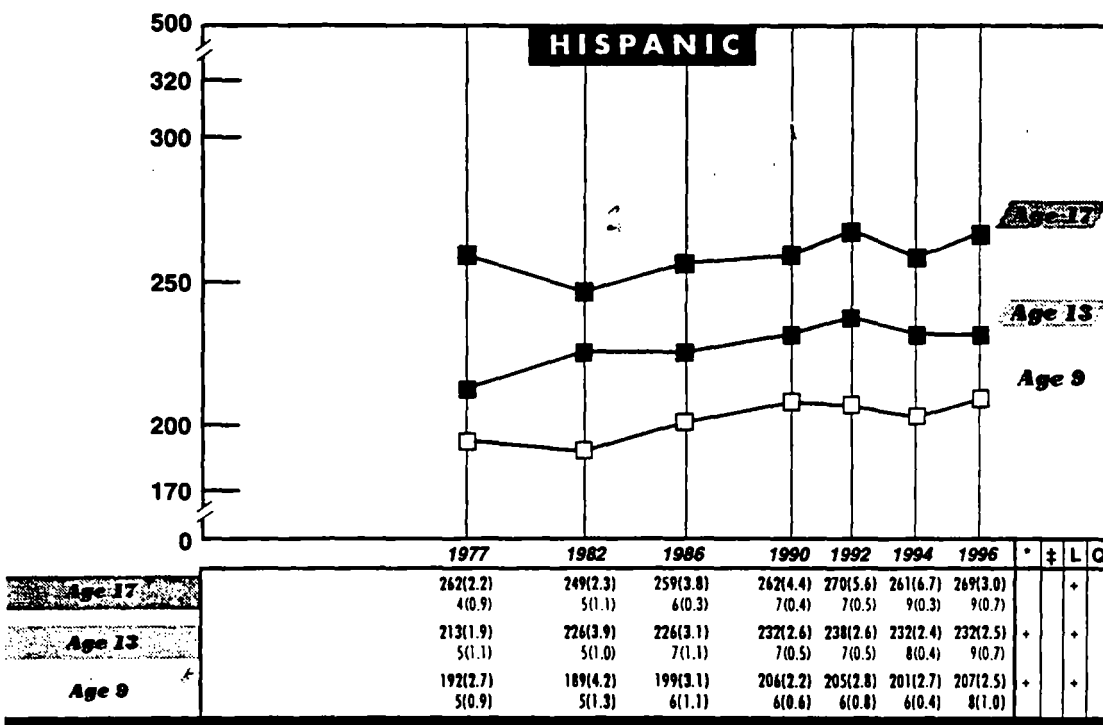


Figure 1.4
(continued)

Trends in Average Science Scale Scores by Race/Ethnicity, 1969-70 to 1996



Below each average scale score, the corresponding percentage is presented.

Standard errors of the estimated scale scores and percentages appear in parentheses.

[--] Extrapolated from previous NAEP analyses.

* Indicates that the average scale score in 1996 is significantly larger (+) or smaller (-) than that in 1969-70 (for White and Black students) or in 1977 (for Hispanic students).

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

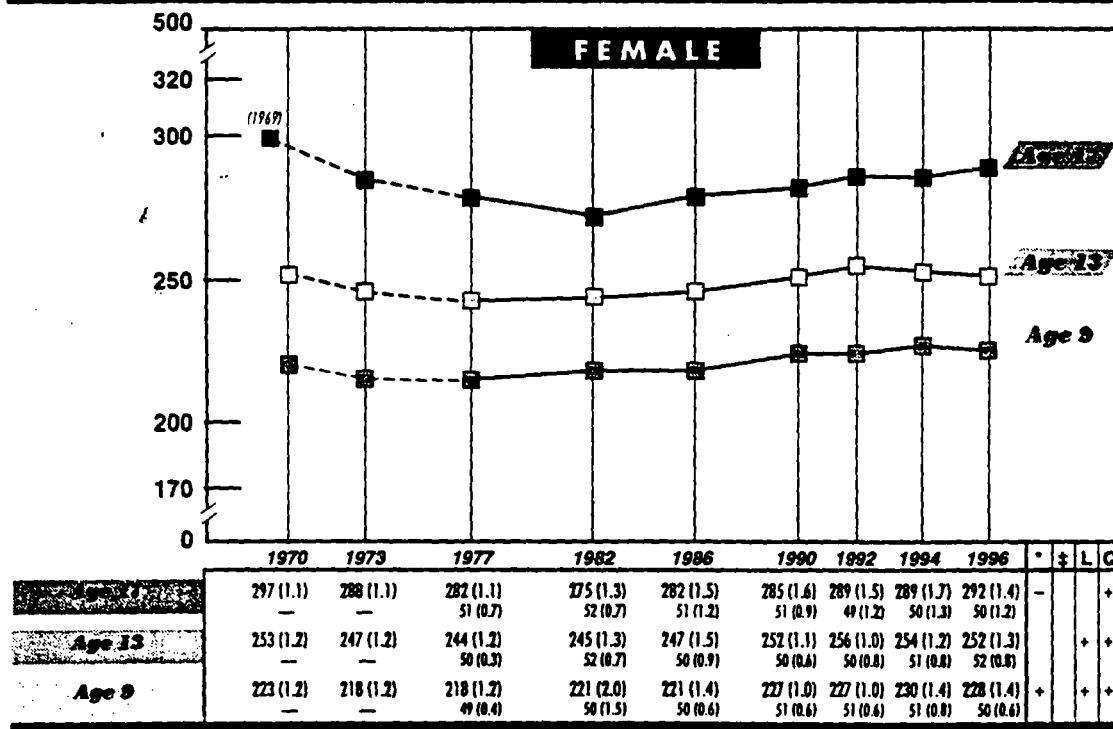
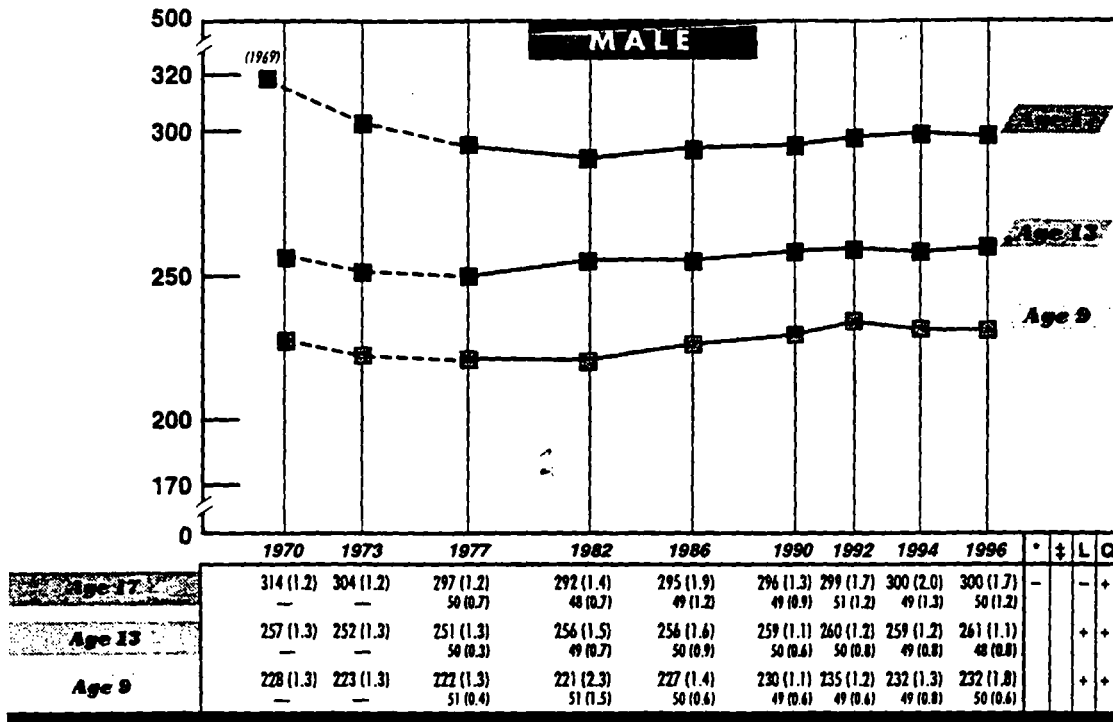
L Indicates that the positive (+) or negative (-) linear trend is significant.

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

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

Figure 1.5

Trends in Average Science Scale Scores by Gender, 1969-70 to 1996



Below each average scale score, the corresponding percentage is presented.

Standard errors of the estimated scale scores and percentages appear in parentheses.

[---] Extrapolated from previous NAEP analyses.

* Indicates that the average scale score in 1996 is significantly larger (+) or smaller (-) than that in 1969-70.

‡ Indicates that the average scale score 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.

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

Figure 3.4

Trends in Average Mathematics Scale Scores by Race/Ethnicity, 1973 to 1996

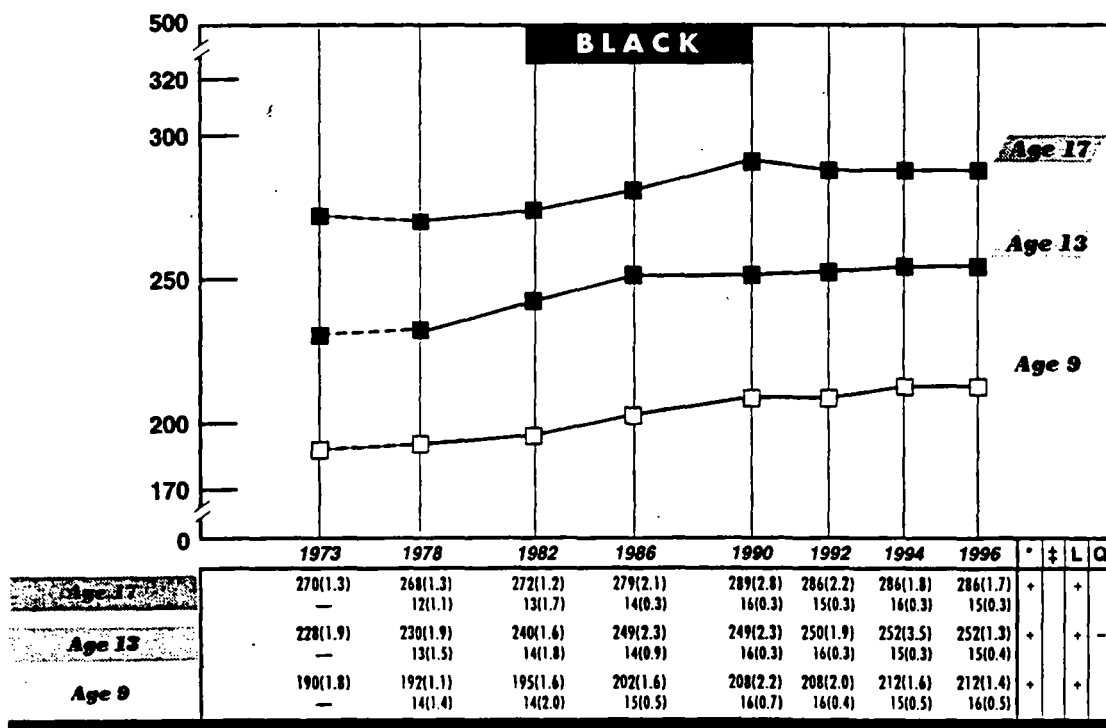
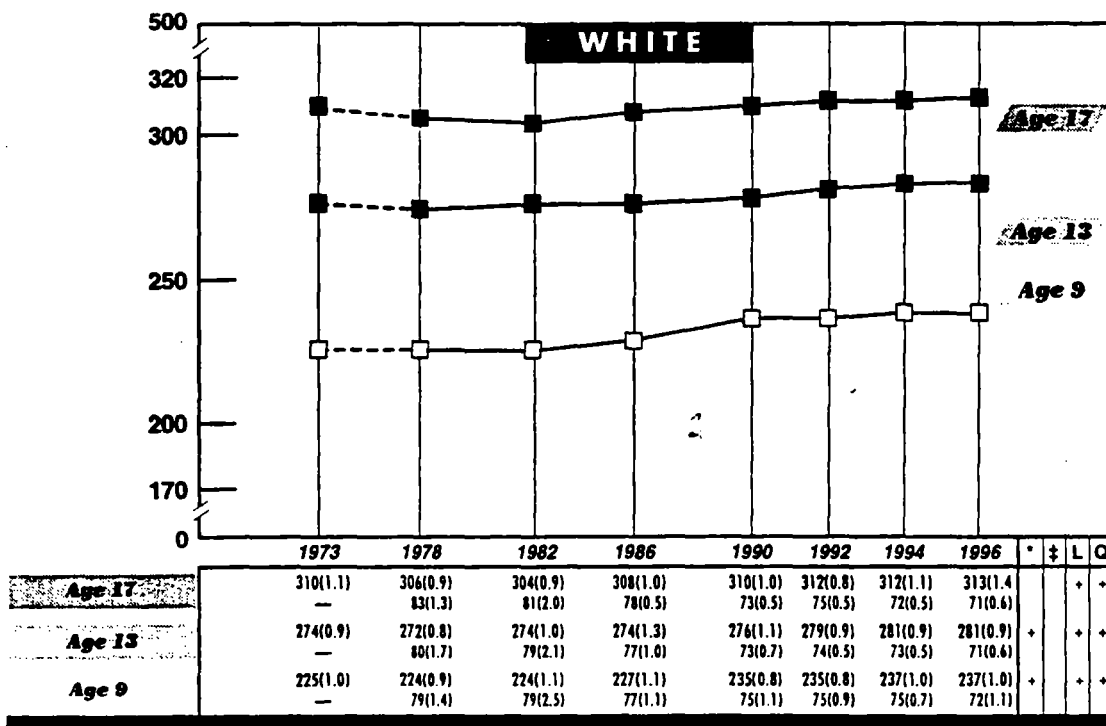
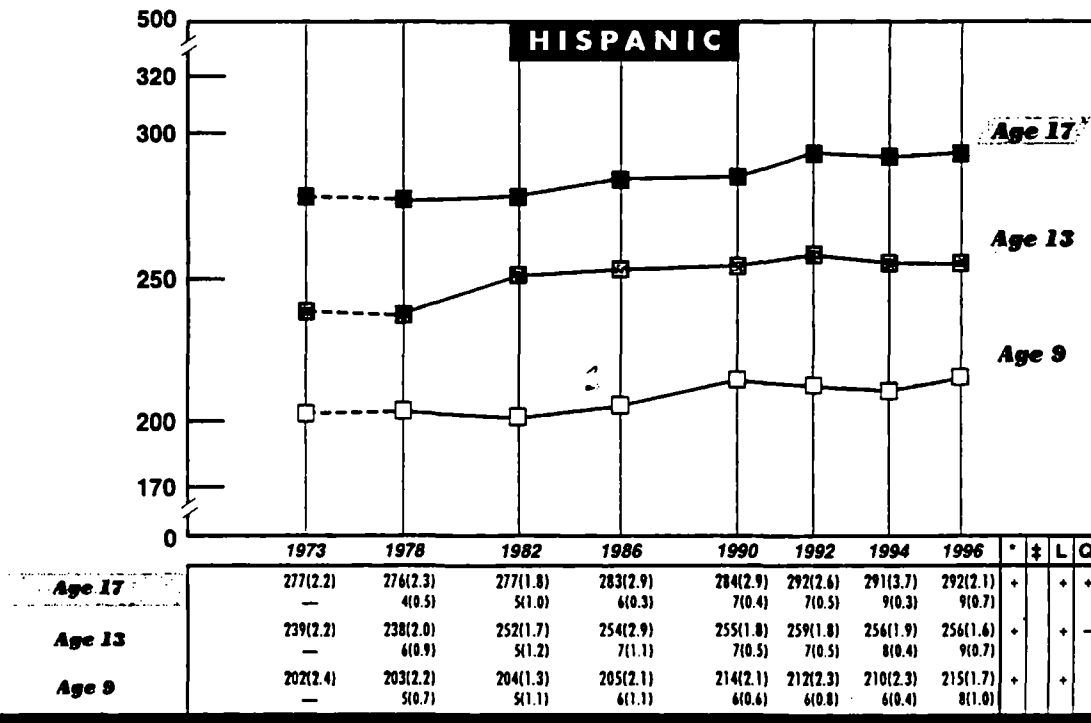


Figure 3.4
(continued)

Trends in Average Mathematics Scale Scores by Race/Ethnicity, 1973 to 1996



Below each average scale score, the corresponding percentage is presented.

Standard errors of the estimated scale scores and percentages appear in parentheses.

[— —] Extrapolated from previous NAEP analyses.

* Indicates that the average scale score in 1996 is significantly larger (+) or smaller (-) than that in 1973.

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

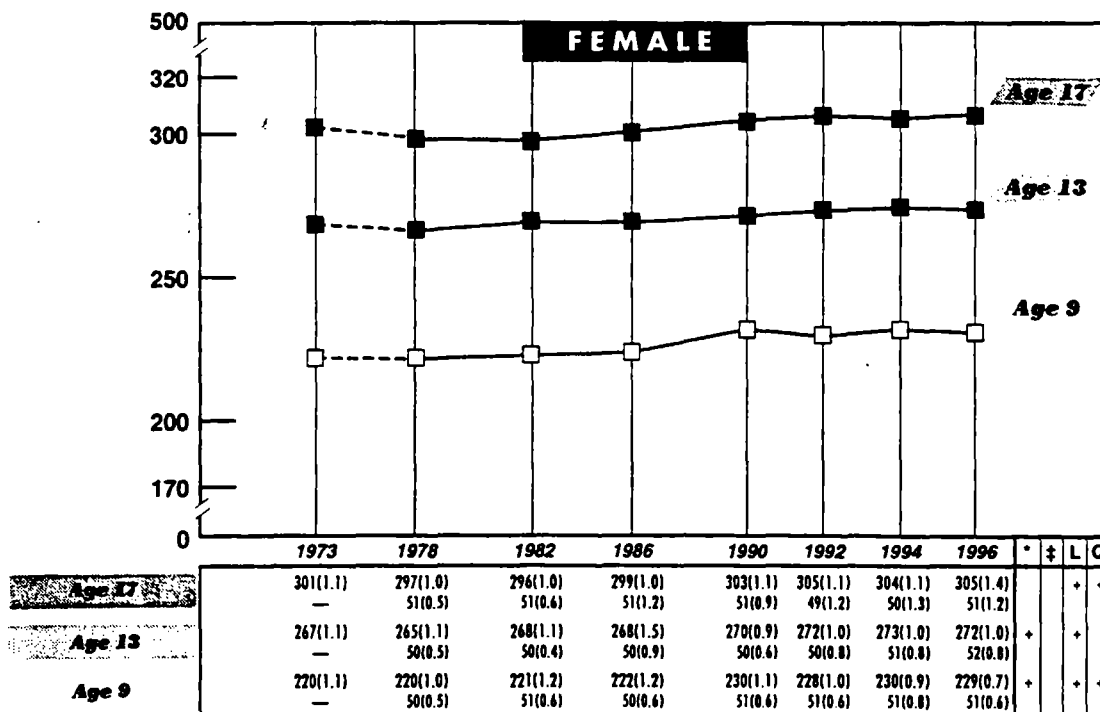
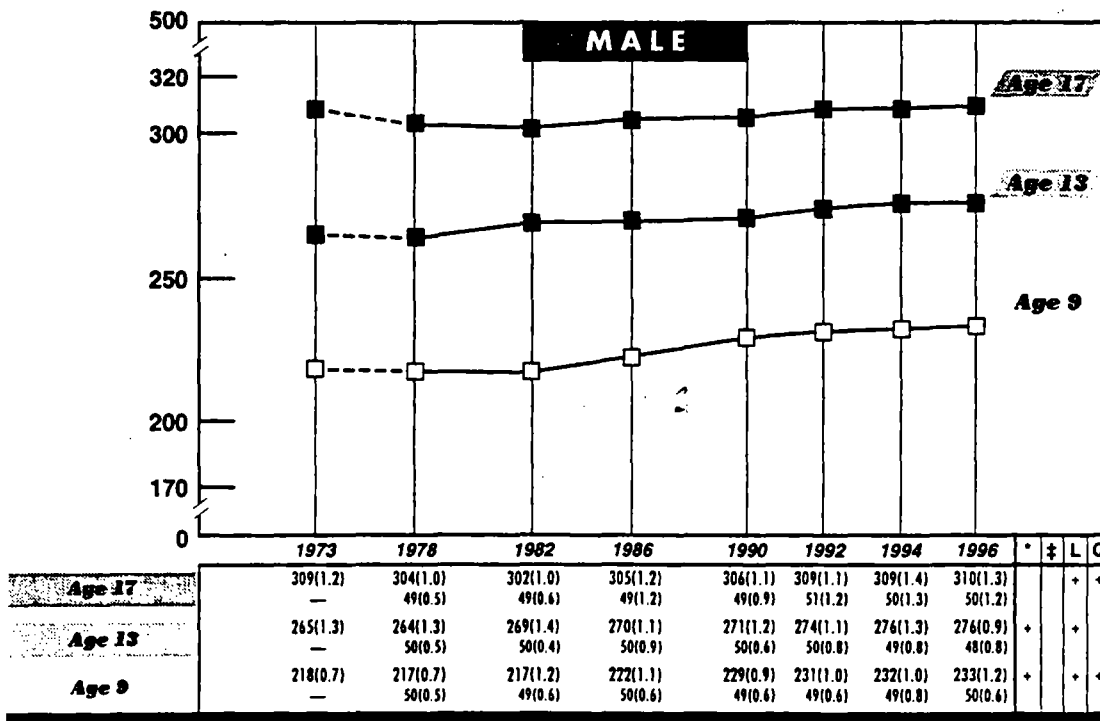
L Indicates that the positive (+) or negative (-) linear trend is significant.

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

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

Figure 3.5

Trends in Average Mathematics Scale Scores by Gender, 1973 to 1996



Below each average scale score, the corresponding percentage is presented.

Standard errors of the estimated scale scores and percentages appear in parentheses.

[— —] Extrapolated from previous NAEP analyses.

* Indicates that the average scale score in 1996 is significantly larger (+) or smaller (–) than that in 1973.

‡ Indicates that the average scale score 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.

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

Figure 5.4

Trends in Average Reading Scale Scores by Race/Ethnicity, 1971 to 1996

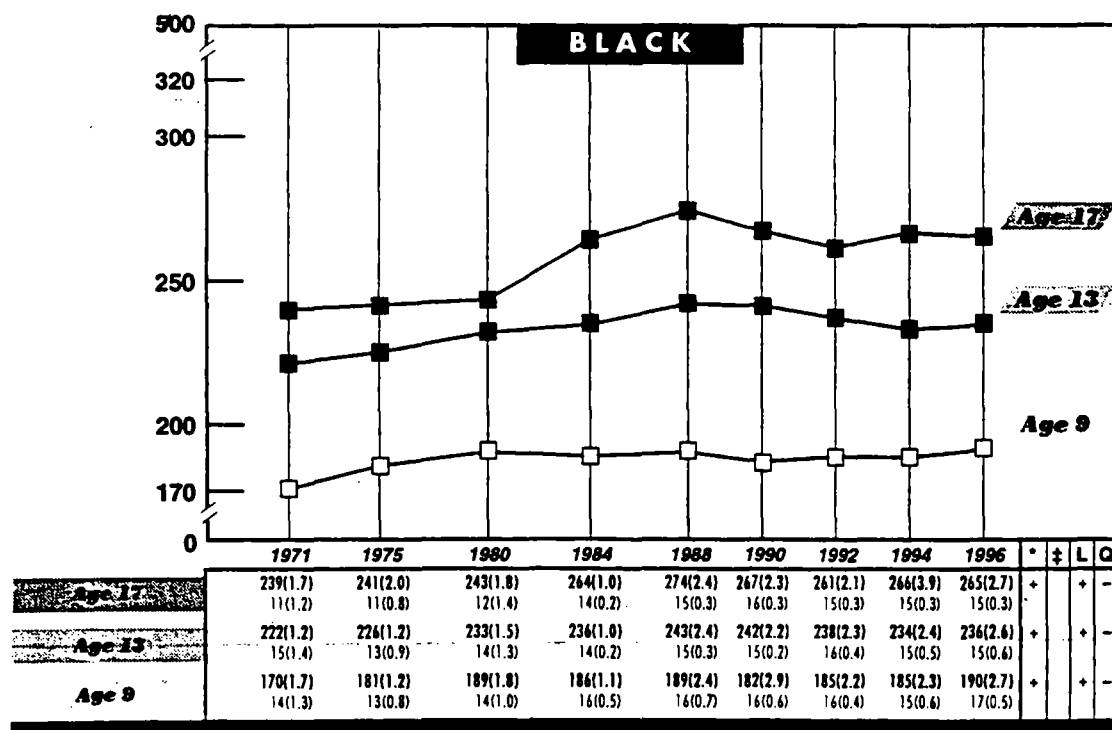
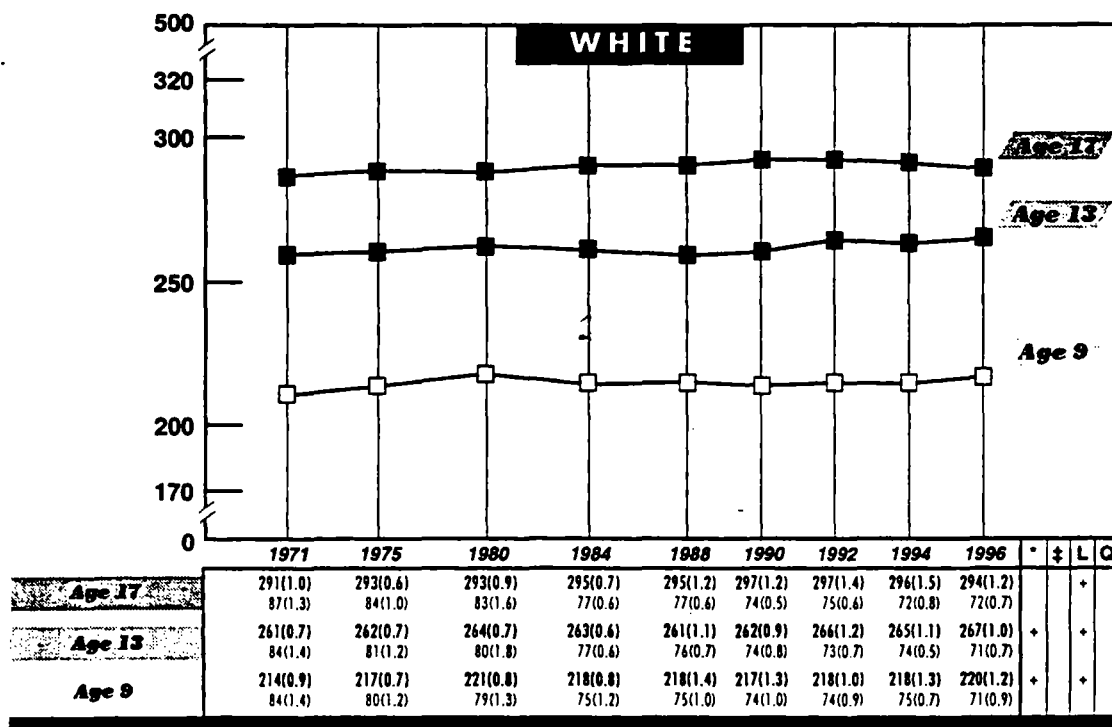
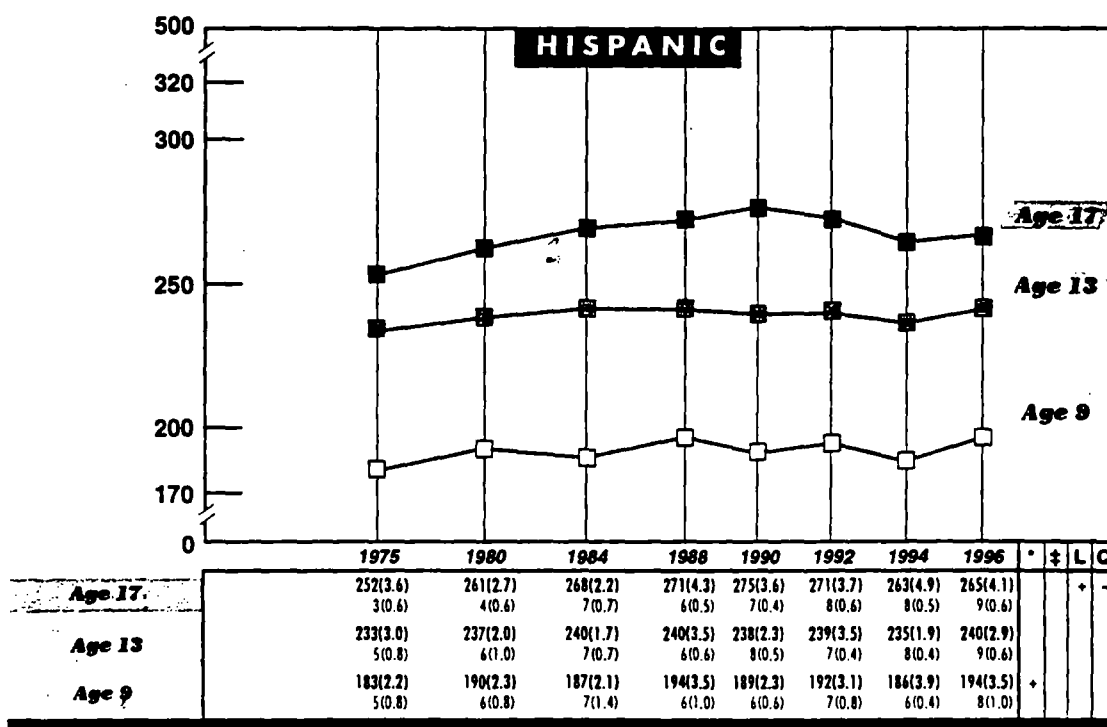


Figure 5.4
(continued)

Trends in Average Reading Scale Scores by Race/Ethnicity, 1971 to 1996



Below each average scale score, the corresponding percentage is presented.

Standard errors of the estimated scale scores and percentages appear in parentheses.

* Indicates that the average scale score in 1996 is significantly larger (+) or smaller (-) than that in 1971 (for White and Black students) or in 1975 (for Hispanic students).

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

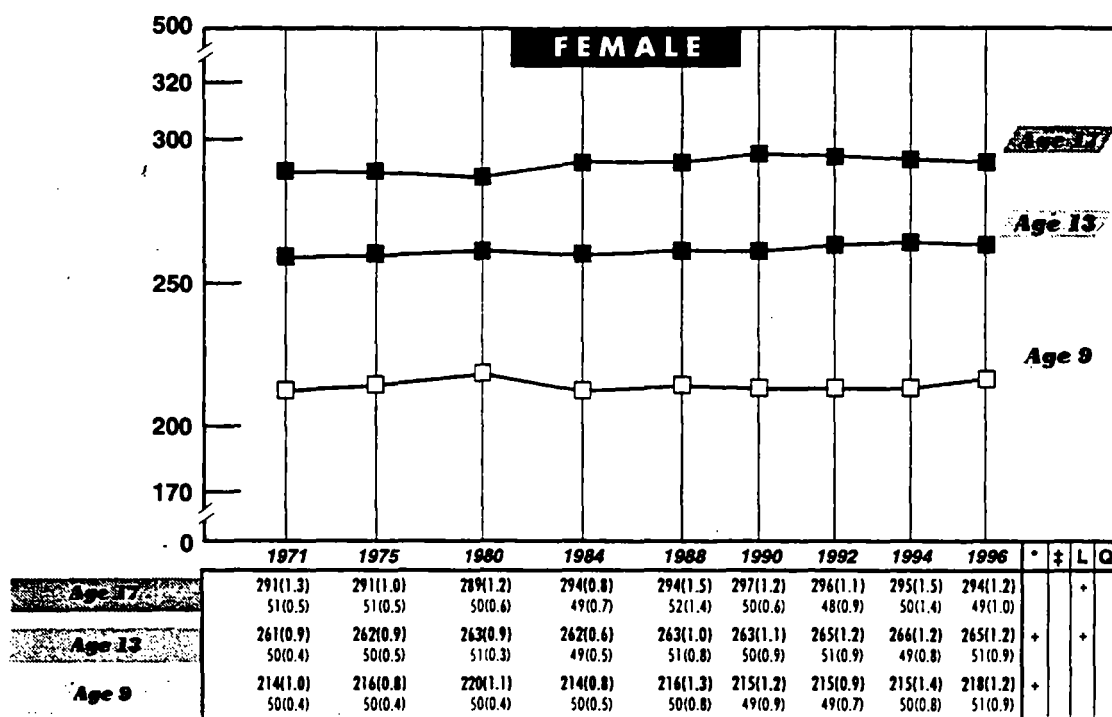
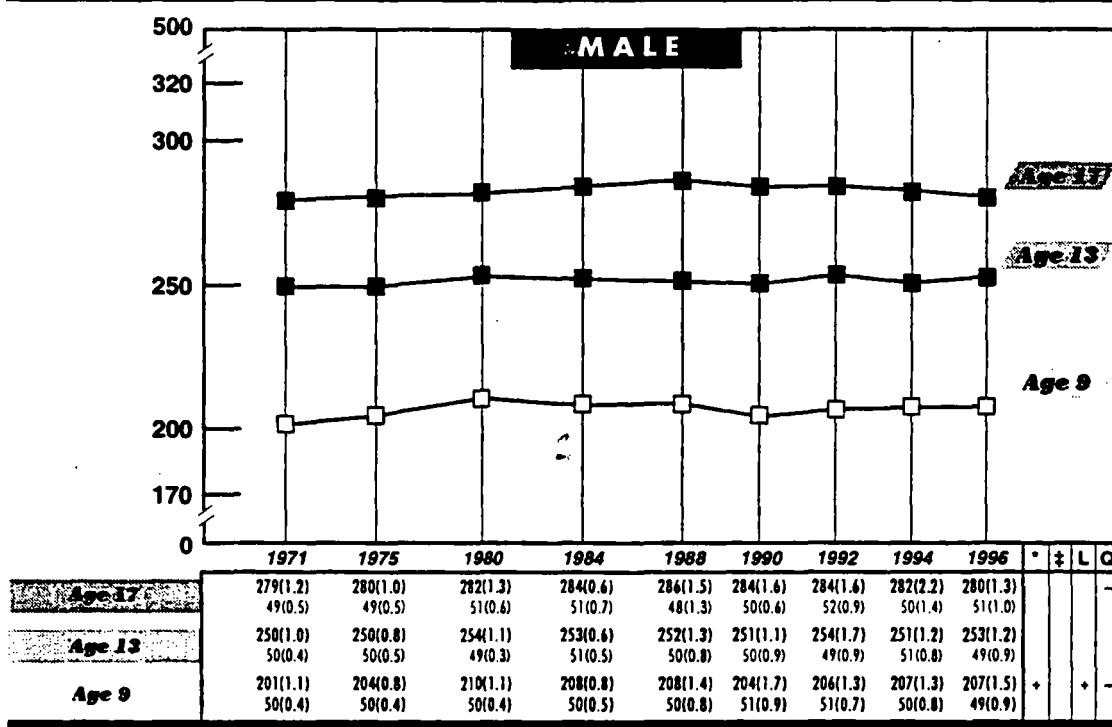
L Indicates that the positive (+) or negative (-) linear trend is significant.

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

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

Figure 5.5

Trends in Average Reading Scale Scores by Gender, 1971 to 1996



Below each average scale score, the corresponding percentage is presented.

Standard errors of the estimated scale scores and percentages appear in parentheses.

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

‡ Indicates that the average scale score 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.

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

Figure 7.4

Trends in Average Writing Scale Scores by Race/Ethnicity, 1984 to 1996

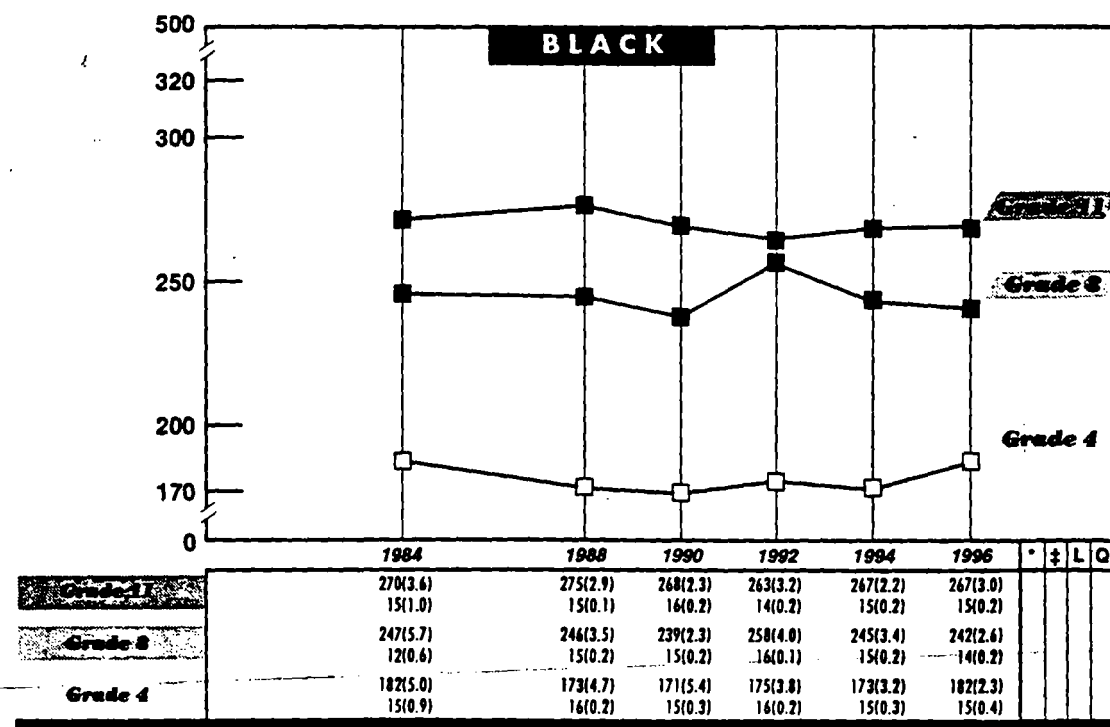
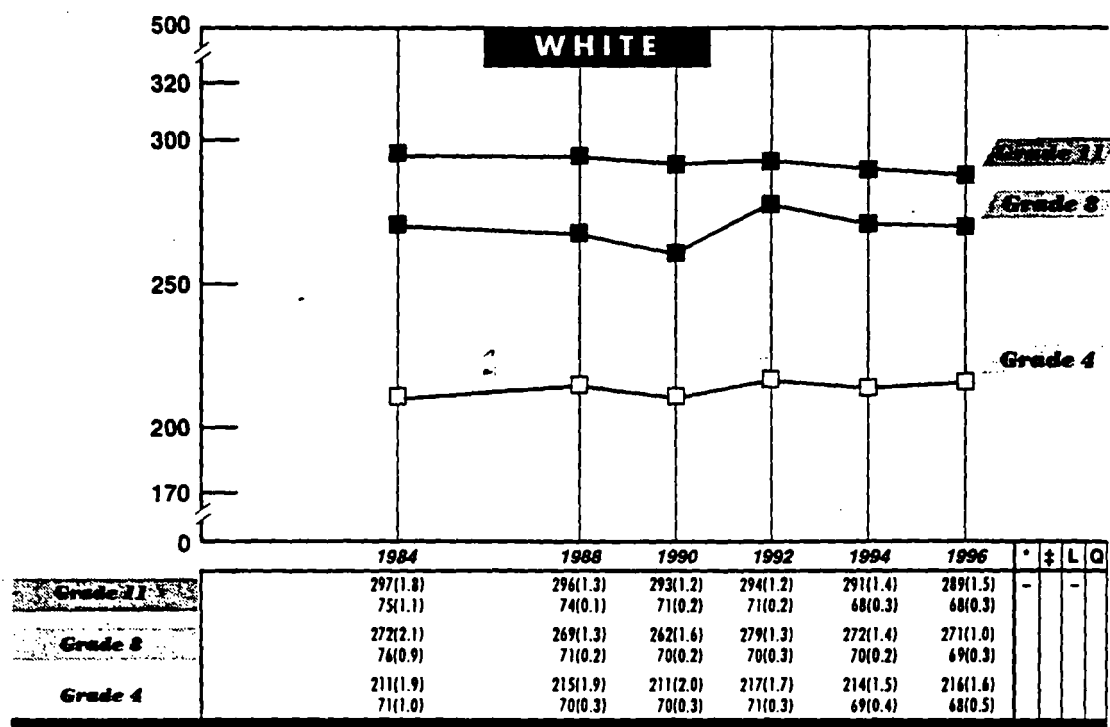
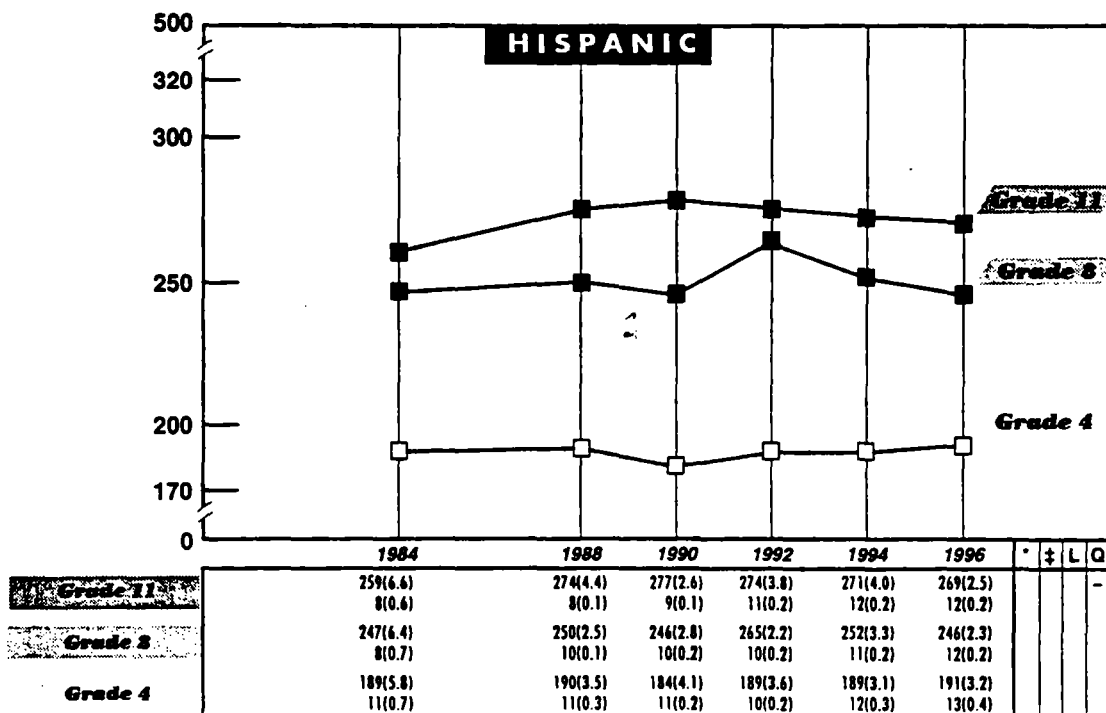


Figure 7.4
(continued)

Trends in Average Writing Scale Scores by Race/Ethnicity, 1984 to 1996



Below each average scale score, the corresponding percentage is presented.

Standard errors of the estimated scale scores and percentages appear in parentheses.

* Indicates that the average scale score in 1996 is significantly larger (+) or smaller (-) than that in 1984.

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

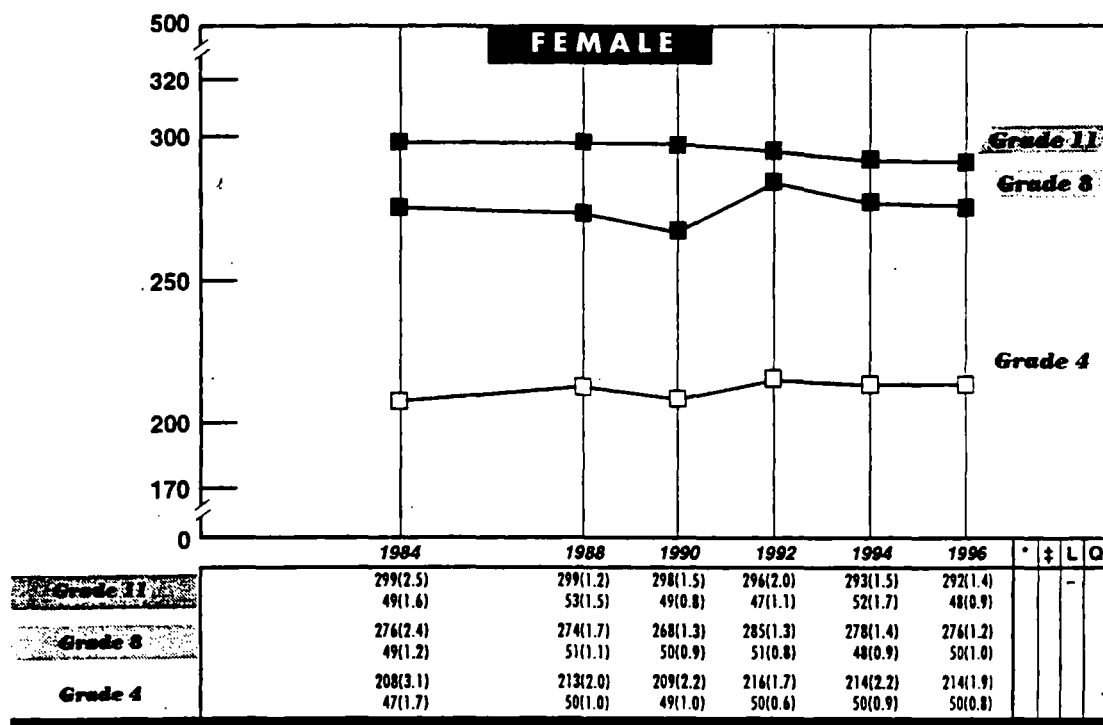
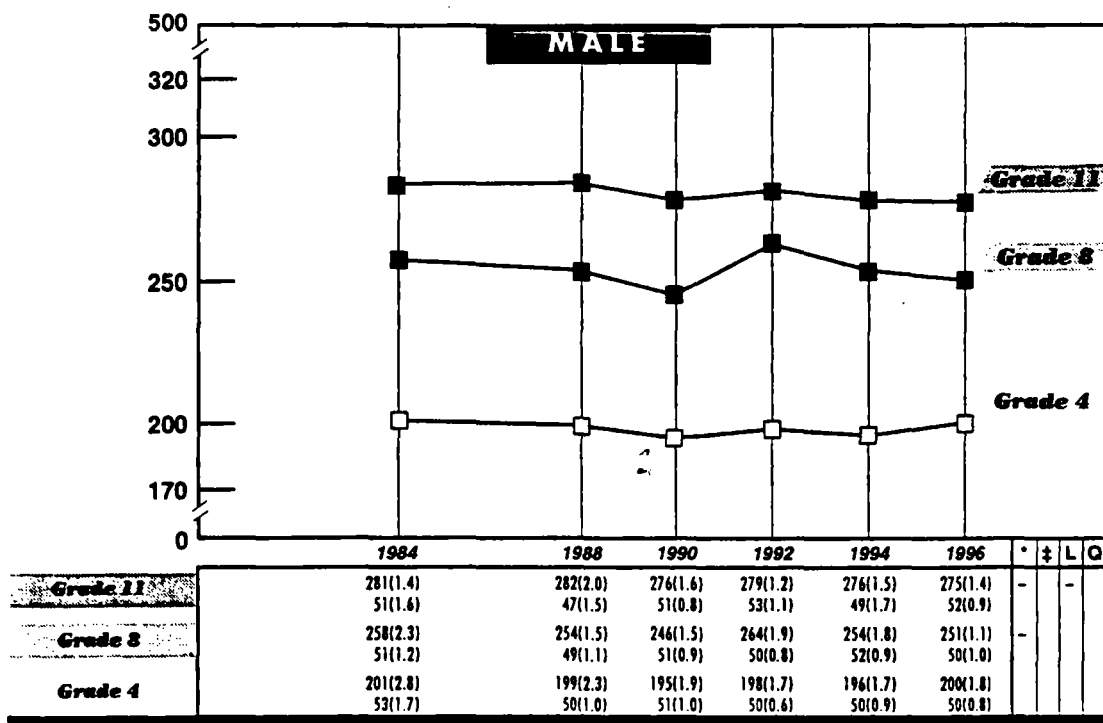
L Indicates that the positive (+) or negative (-) linear trend is significant.

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

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

Figure 7.5

Trends in Average Writing Scale Scores by Gender, 1984 to 1996



Below each average scale score, the corresponding percentage is presented.

Standard errors of the estimated scale scores and percentages appear in parentheses.

* Indicates that the average scale score in 1996 is significantly larger (+) or smaller (-) than that in 1984.

‡ Indicates that the average scale score 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.

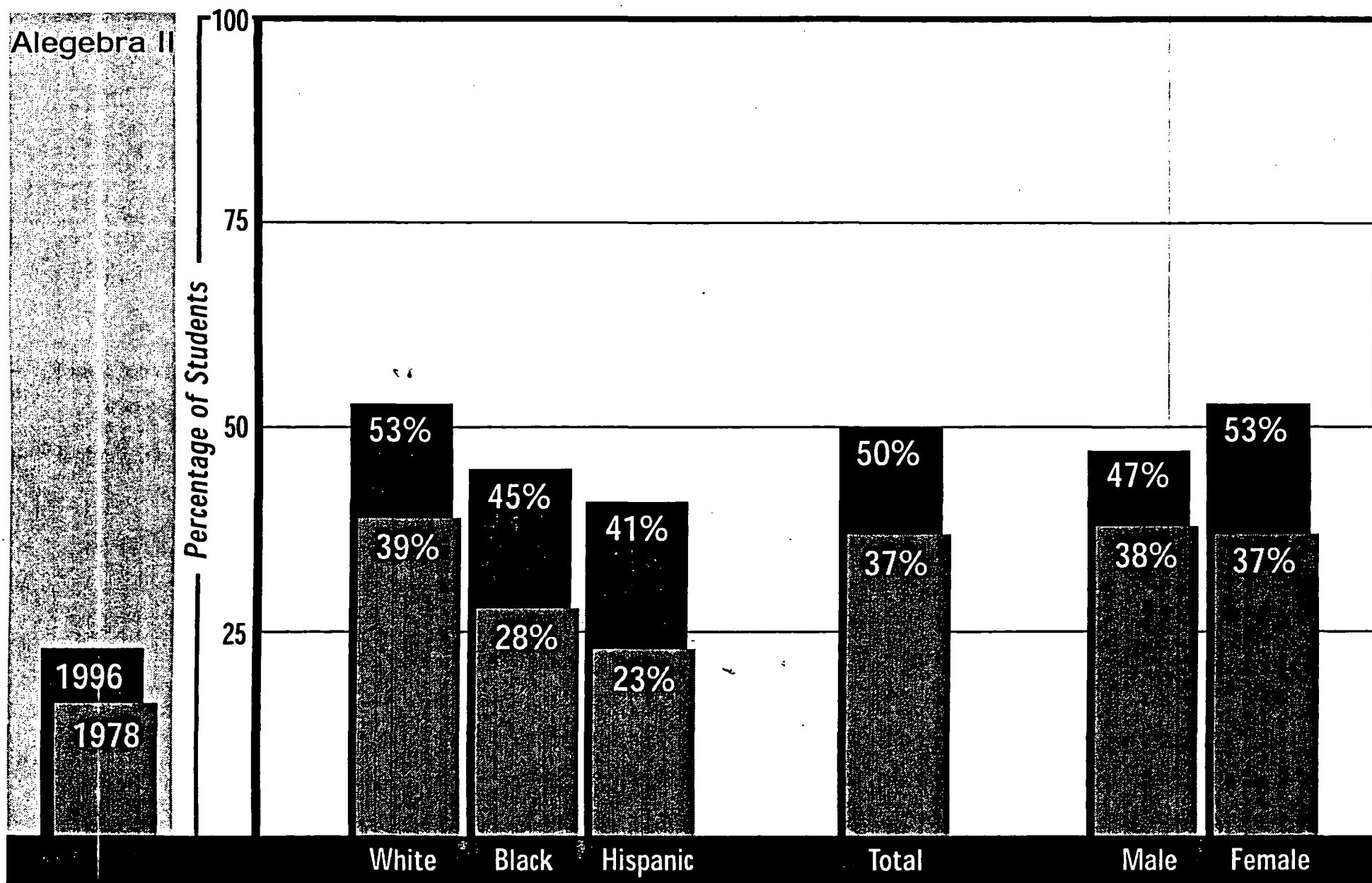
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 Long-Term Trend Assessment.

6. Students are taking higher-level courses in science and mathematics.

Science. There was a trend toward greater percentages of 17-year-olds taking biology and chemistry between 1986 and 1996. The percentages of black and Hispanic students taking chemistry increased considerably, and women were more likely to study biology, chemistry and physics in 1996 than in 1986.

Mathematics. A higher proportion of 13-year-olds were taking prealgebra, and more 17-year-olds were taking algebra II, precalculus, or calculus in 1996 compared with 1986. The percentages of black and Hispanic 17-year-old students taking algebra II have increased, and women were more likely to take algebra II as well as precalculus or calculus.

Mathematics Course Taking at Age 17, for the Nation, by Gender, and by Race/Ethnicity, 1978 and 1996



Science Course Taking at Age 17, for the Nation, by Gender, and by Race/Ethnicity, 1986 and 1996

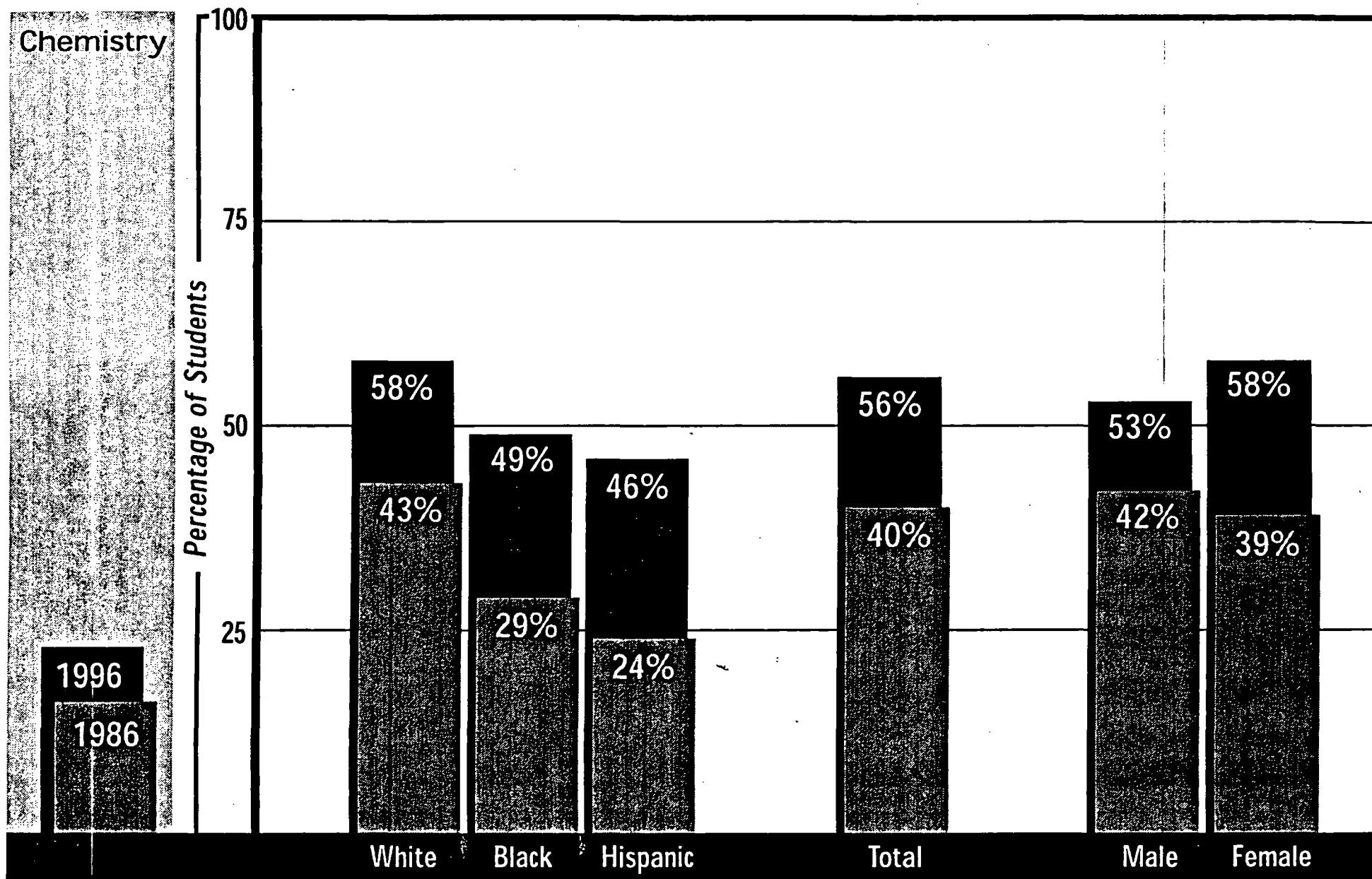


Table A.14
NAEP 1996 Science Long-Term Trend Assessment — Age 17
Percentages of students with science scale scores at or above 300


		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)	48.5(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)	53.3(1.7)			+	
	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(1.9)	+		+	+
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)	58.7(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)	17.2(2.1)	+		+	
	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)	24.0(3.1)			+	
	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)	47.0(7.4)				
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)	27.6(2.3)	+		+	
	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)	55.2(1.6)	+		+	+
	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)	53.3(5.8)				
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)	48.8(4.1)				
	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)	41.0(2.8)	+		+	
	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)	59.4(3.4)	+		+	
	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)	45.1(2.2)			+	
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)	17.3(3.4)				
	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)	36.6(3.0)				+
	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(2.6)				
	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)	59.4(1.8)				
	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)	18.8(4.6)				
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)	47.8(1.4)	+		+	+
	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)	56.5(6.4)				
Quartiles												
	Upper	86.6(0.9)	82.8(1.3)	96.7(1.0)	98.4(0.5)	99.4(0.3)	99.6(****)	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)	44.6(1.3)	45.6(1.8)	+		+	+
	Lower	3.8(0.4)	1.7(0.3)	0.3(****)	0.4(****)	0.5(0.3)	0.4(****)	0.4(****)				

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 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 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)	68.0(2.0)	+		+	+
	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)	2.4(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.