

Table of Contents

	Page
List of Tables	iii-iv
List of Figures	v-vi
Executive Summary	vii-x
Introduction	1
Section 1. North Carolina’s Performance and National Standards	
Background	2
National Assessment of Educational Progress (NAEP)	
Background	3 - 4
Mathematics	
Grade 4	
Scale Scores	5 - 6
Achievement Levels	6 - 8
Grade 8	
Scale Scores	8 - 10
Achievement Levels	10 - 12
Science	
Grade 4	
Scale Scores	12 - 13
Achievement Levels	14
Grade 8	
Scale Scores	15 - 16
Achievement Levels	16 - 17
NAEP Summary	18
Iowa Tests of Basic Skills (ITBS)	
Background	19
Grade 5	
Total Skills	20
Advanced Skills	20 - 21
Grade 8	
Total Skills	21 - 22
Advanced Skills	22
ITBS Summary	23 - 24
Scholastic Assessment Test (SAT)	
Background	25
Statewide Performance	26 - 27
Participation Rate	28
Entering Students at UNC Institutions	29 - 31

	Page
Advanced Placement (AP) Examinations	
Background	32
Participation Rate	32 - 33
Statewide Performance	34 - 35
Section 2. North Carolina’s Performance and State Standards	
ABCs of Public Education	
Background	36
Definitions of Awards and Recognition Categories	36 - 37
ABCs Results: K-12 Schools	37 - 38
Student Achievement Levels	
Background	39
Reading Achievement Levels	39 - 40
Mathematics Achievement Levels	40 - 41
Changes in Student Achievement Levels	41 - 42
Section 3. Good News about North Carolina’s Public Schools	43 - 44
References	45 - 46

List of Tables

Table		Page
1	Definitions of the National Assessment of Educational Progress (NAEP) Achievement Levels	4
2	Percentages of Public School Grade 4 Students Attaining NAEP’s Mathematics Achievement Levels in North Carolina, the Southeast, and the Nation, 1992-2000	7
3	Percentages of Public School Grade 8 Students Attaining NAEP’s Mathematics Achievement Levels in North Carolina, the Southeast, and the Nation, 1990-2000	11
4	Percentages of Public School Grade 4 Students Attaining NAEP’s Science Achievement Levels in North Carolina, the Southeast, and the Nation, 2000	14
5	Percentages of Public School Grade 8 Students Attaining NAEP’s Science Achievement Levels in North Carolina, the Southeast, and the Nation, 1996-2000	16
6	Summary of NAEP Average Scale Scores in Reading, Writing, Mathematics, and Science for North Carolina, the Southeast and the Nation, 1990-2000	18
7	Summary of National Percentile Ranks (NPRs) in the Various Skill Areas of the Iowa Tests of Basic Skills (ITBS), North Carolina’s Grade 5, 1996-2001	24
8	Summary of National Percentile Ranks (NPRs) in the Various Skill Areas of the Iowa Tests of Basic Skills (ITBS), North Carolina’s Grade 8, 1996-2001	24
9	Mean (Average) SAT Scores for North Carolina and the Nation, 1972-2001	27
10	Average Total SAT Scores of Freshmen Entering Member Institutions of the University of North Carolina System, 1996-2000	31
11	Advanced Placement Examination Courses Taken by North Carolina’s Public School Students with Number of Candidates, Number of Scores Equal to Three or Higher, and Percent of Scores Equal to Three or Higher, 2000-01	35
12	Number and Percent of Public Schools in North Carolina Receiving Awards and Recognition, 1997-2001	38

Table	Page
13	Description of Four Achievement Levels used in North Carolina’s End-of-Grade (EOG) Testing 39
14	Transition between End-of-Grade (EOG) Reading Achievement Levels for Grade 3 through Grade 8 Matched Cohorts in North Carolina, 2000-01 40
15	Transition between End-of-Grade (EOG) Mathematics Achievement Levels for Grade 3 through Grade 8 Matched Cohorts in North Carolina, 2000-01 40
16	Percent of Students in Grades 3-8 Remaining at Level, Dropping to Lower Levels, or Progressing to Higher Achievement Levels on Reading End-of-Grade (EOG) Tests, 1997-2001 41
17	Percent of Students in Grades 3-8 Remaining at Level, Dropping to Lower Levels, or Progressing to Higher Achievement Levels on Mathematics End-of-Grade (EOG) Tests, 1997-2001 42

List of Figures

Figure		Page
1	Average Mathematics Scale Scores for Grade 4 Students in North Carolina, the Southeast, and the Nation on the National Assessment of Educational Progress (NAEP), 1992-2000	5
2	Gap between the Tenth and Ninetieth Percentile Scale Scores in Mathematics for North Carolina’s Grade 4 Students on the National Assessment of Educational Progress (NAEP), 1992-2000	6
3	Percentages of Public School Grade 4 Students Attaining NAEP’s Mathematics Achievement Levels in North Carolina, the Southeast, and the Nation, 1992-2000	8
4	Average Mathematics Scale Scores for Grade 8 Students in North Carolina, the Southeast and the Nation on the National Assessment of Educational Progress (NAEP), 1990-2000	9
5	Gap between the Tenth and Ninetieth Percentile Scale Scores in Mathematics for North Carolina’s Grade 8 Students on the National Assessment of Educational Progress (NAEP), 1990-2000	10
6	Percentages of Public School Grade 8 Students Attaining NAEP’s Mathematics Achievement Levels in North Carolina, the Southeast, and the Nation, 1990-2000	12
7	Average Science Scale Scores for Grade 4 Students in North Carolina, the Southeast, and the Nation on the National Assessment of Educational Progress (NAEP), 2000	13
8	Gap between the Tenth and Ninetieth Percentile Scale Scores in Science for North Carolina’s Grade 4 Students on the National Assessment of Educational Progress (NAEP), 2000	13
9	Percentages of Public School Grade 4 Students Attaining NAEP’s Science Achievement Levels in North Carolina, the Southeast, and the Nation, 2000	14
10	Average Science Scale Scores for Grade 8 Students in North Carolina, the Southeast, and the Nation on the National Assessment of Educational Progress (NAEP), 1996-2000	15

11	Gap between the Tenth and Ninetieth Percentile Scale Scores in Science for North Carolina's Grade 8 Students on the National Assessment of Educational Progress (NAEP), 1996-2000	16
12	Percentages of Public School Grade 8 Students Attaining NAEP's Science Achievement Levels in North Carolina, the Southeast, and the Nation, 1996-2000	17
13	National Percentile Ranks (NPRs) in Total Skills for North Carolina's Grade 5 Students on the Iowa Tests of Basic Skills (ITBS), 1996-2001	20
14	National Percentile Ranks (NPRs) in Advanced Skills for North Carolina's Grade 5 Students on the Iowa Tests of Basic Skills (ITBS), 1996-2001	21
15	National Percentile Ranks (NPRs) in Total Skills for North Carolina's Grade 8 Students on the Iowa Tests of Basic Skills (ITBS), 1996-2001	22
16	National Percentile Ranks (NPRs) in Advanced Skills for North Carolina's Grade 8 Students on the Iowa Tests of Basic Skills (ITBS), 1996-2001	22
17	Mean Total SAT Scores for North Carolina, the Southeast, and the United States, 1990-2001	26
18	Mean Total SAT Scores by Percent of Students Tested for all States, 2001	28
19	The 25 th , 50 th , and 75 th Percentile of SAT Total Scores for National College-Bound Seniors, North Carolina's College-Bound Seniors, Entering Freshmen at Institutions of the University of North Carolina System, and Selected Private Universities, Fall 2000	30
20	Number of Advanced Placement Candidates and Examinations in North Carolina's Public Schools, 1990-01	33
21	Number of Advanced Placement Candidates and Examinations in the Nation's Public Schools, 1990-01	33
22	Percent of Advanced Placement (AP) Examinations with Grades of 3 or Above for Public School Students in North Carolina and the Nation, 1990-01	34

Executive Summary

The *State of the State* report provides a mechanism for educators, students, parents, policymakers, and the public to monitor educational achievement and progress in North Carolina's public school system. Just as importantly, it provides information for comparing North Carolina's student achievement with that of students throughout the nation. This edition provides an overview of North Carolina students' results on state and national tests in 2001. Results from previous years are also included to show trends in performance and achievement.

The 2001 test results for North Carolina's students continue to show the positive impact of ongoing educational reforms and innovative initiatives on student achievement in the state's public schools. The overall performance of the state's students on the NAEP, the ITBS, the SAT, the AP Examinations, the ABCs, and other state-mandated tests during recent years show overall progress. The state's students are continuing to build on recent academic success and are positioned for continued gains in the future.

National Assessment of Educational Program (NAEP)

Highlights of results from NAEP administrations in North Carolina prior to 2000 were included in the 2000 *State of the State*. Overall, those highlights indicated that, although there is room for improvement, the state has made impressive progress in reading, writing, mathematics, and science. This edition of the *State of the State* includes only results for grades 4 and 8 mathematics and science. Some highlights of these results are as follows:

Grade 4 Mathematics:

- North Carolina scored six points higher than the nation and 12 points higher than the south-east.
- The state's average scale scores have improved each year since 1992, by 11 points in 1996 and by ten points in 2000.
- Among all states and jurisdictions, North Carolina had the largest gain since 1992 (20 points) and tied with Virginia in having the second largest gain since 1996 (8 points) [NCES, *The Nation's Report Card: Mathematics 2000*, August 2, 2001, p. 36].
- North Carolina scored as well as or better than 39 of the 47 jurisdictions participating in the assessment. [NCES, *The Nation's Report Card: Mathematics 2000*, August 2, 2001, p. 36].

Grade 8 Mathematics:

- North Carolina's students have scored progressively higher on each of the three Mathematics assessments since 1990, eight points higher in 1992, ten points higher in 1996, and 12 points higher in 2000.
- North Carolina's scored notably higher than the Southeast and the nation in 2000.

- Among 47 states and jurisdictions, North Carolina had the largest gain since 1990 (30 points), 1992 (22 points), and 1996 (12 points) [NCES, *The Nation's Report Card: Mathematics 2000*, August 2, 2001, p. 36].
- North Carolina scored as well as or better than 32 of the 40 jurisdictions participating in the assessment.

Grade 4 Science:

- North Carolina's average scale score tied the nation's score and exceeded the Southeast score by seven points.
- North Carolina's students scored higher than counterparts in 13 states and other jurisdictions, not significantly different from those from 11 states and other jurisdictions, and lower than those in 19 states and other jurisdictions [NCES, *The Nation's Report Card: State Science 2000*, November 2001, p. 10].

Grade 8 Science:

- The average scale score for North Carolina's grade 8 students in 2000 equalled the 1996 score.
- Ten states and other jurisdictions attained average scale scores lower than North Carolina's score in 2000 [NCES, *The Nation's Report Card: State Science 2000*, November 2001, p. 11].

Iowa Tests of Basic Skills (ITBS)

Grade 5:

- In all total skills subtests, North Carolina's students scored higher in 2001 than in any year since 1996.
- For the first time in six years, the state's students scored above the U. S. Median in Reading Total Skills. Prior to 2001, grade 5 students had scored lower than the U. S. Median in this skill area.
- In Advanced Skills, Grade 5 students improved in all skill areas from the previous year and attained the best performance ever in those areas.

Grade 8:

- Students in Grade 8 made notable improvement in all skills areas in 2001, scoring at or near the national median in all areas except Language Total Skills.
- In Mathematics Total Skills, grade 8 students exceeded their impressive performance of the previous year and scored well over the national average.

- In Reading, grade 8 students raised their score from the previous year, scoring nearly five NPRs above the U. S. Median.
- In Advanced Skills, Grade 8 students improved in all skill areas from the previous year and attained the best performance ever in each of the skill areas.

Scholastic Assessment Test (SAT)

- With about a three percent increase in total test takers from the previous year, North Carolina's mean total SAT score (992) increased four points in 2001.
- North Carolina gained three points on the nation in 2001.
- From 1991 to 2001, North Carolina gained more points (40) than any other state where more than 12 percent of students took the test.
- Among "SAT States" (states with more than 50 percent test takers), North Carolina had the largest gain (40 points) since 1991.
- The 28 point gap between North Carolina's mean and the nation's mean in 2001 represents a narrowing of nearly 50 percent since 1990 (when the gap was 53 points) and over 66 percent since 1972 when the gap was 83 points.

AP Examinations

- In the 2000-01 school year, 20,980 public school students in North Carolina took 36,245 AP Examinations, 9.0 percent more students and 11.6 percent more examinations than in the previous year.
- North Carolina had 55 more examinations per 1000 than the nation.
- Between 1990 and 2001, AP candidates and examinations in North Carolina's public schools more than tripled.
- Of 36,245 examinations taken by North Carolina's students in 2001, 54.0 percent scored three or higher, slightly lower than the previous year's score.
- In 2001, the gap between North Carolina and the nation in the percent of examinations earning grades of three or higher was 5.6 points, an increase of nearly three points from 1990.

ABCs of Public Education

- The proportion of public schools in North Carolina making expected growth increased from one-fourth in 1999-00 to just over one-third in 2000-01.
- The proportion of public schools in North Carolina making exemplary growth decreased from nearly one-half in 1999-00 to about one-fourth in 2000-01.

- The number of schools of excellence more than doubled in 2000-01 from the previous year.
- There were 131 more Schools of Distinction in 2000-01 than in the previous year.
- There were 13 fewer Low Performing Schools in 2000-01 than in the previous year.

Student Achievement Levels

Reading:

- Among students who began in Reading Levels I and II, some students improved during 2000-01, but many continued to perform in the lower levels.
- Students who started out in higher achievement levels tended to continue high performance.

Mathematics:

- The performance pattern in mathematics achievement was similar to that in reading, with students who started out in higher achievement levels continuing high performance. Those who started at the lower achievement levels continued low performance.
- From 1996-97 to 2000-01, increasing percentages of students moved to higher achievement levels in reading and mathematics, while the percentages remaining at or falling to lower levels decreased.

Introduction

This is the tenth issue of the *State of the State—Educational Performance in North Carolina*, which originated pursuant to the School Improvement and Accountability Act enacted by the General Assembly of North Carolina in 1989. As one of several annual reports used to monitor the state’s public school system, the *State of the State* serves three major purposes. One purpose is to assist policymakers in gauging the status and progress of student achievement in North Carolina’s schools. Another purpose is to permit comparison of North Carolina student achievement with that of students throughout the nation. A third purpose is to apprise the public of the state’s student achievement. Similar to other reports that evaluate North Carolina’s public schools, the *State of the State* report cites student performance as a primary indicator of the extent to which the state’s schools are meeting the educational needs of its students.

This edition of *State of the State* is divided into three sections:

Section 1, *North Carolina’s Performance and National Standards*, addresses North Carolina student performance in relation to national standards and compares the state’s results to those of other states on the National Assessment of Educational Progress (NAEP), the Iowa Tests of Basic Skills (ITBS), and the Scholastic Assessment Test (SAT). It also highlights the performance of North Carolina students on Advanced Placement Program examinations.

Section 2, *North Carolina’s Performance and State Standards*, summarizes the 2000-2001 school-based accountability results for the state’s elementary, middle, and high schools. Trends in student performance in terms of achievement levels for grades 3-8 are highlighted. Comprehensive state-wide testing results for North Carolina may be found in “*The Green Book*”: *The North Carolina State Testing Results* and at the testing website: <http://www.ncpublicschools.org/accountability/reporting/>.

Section 3, *Good News about North Carolina’s Public School System*, summarizes the collective accomplishments of North Carolina’s public schools during the 2000-2001 school year. Special recognition and honors from educators, policymakers, the business community, the news media, and the general public, within and outside the state, are highlighted in this section.

This report does not disaggregate data by racial/ethnic and gender groups. However, the *Minority Achievement Report: Trends in Subgroup Performance* reports trends in performance by racial/ethnic groups in the North Carolina and in the nation. This report may be found at the reporting website: <http://www.ncpublicschools.org/reporting.html>.

Section 1. North Carolina's Performance and National Standards

Background

The North Carolina statewide testing program has used state-developed tests to assess the academic achievement of the state's students since 1985-86, with the first administration of the Algebra I End-of-Course (EOC) test. Currently, in addition to Algebra I, ten other high school tests (Algebra II, Biology, Chemistry, ELPS, English I, English II, Geometry, Physical Science, Physics, and U. S. History) are administered annually as part of the statewide testing program. The first End-of-Grade (EOG) tests were administered in the 1992-93 school year in an effort to establish assessment strategies that were more rigorous than the previously used California Achievement Tests. The tests currently in use are closely aligned with the mandated state curriculum and national standards and are designed to assess higher order thinking skills.

Because the state curriculum and end-of-grade tests permit the tracking of student performance over a period of years (grades 3-8), a school accountability model based upon student growth can be implemented. Such a model, the ABCs of Public Education, was adopted by the State Board of Education. The ABCs, North Carolina's principal school improvement effort, emphasizes Accountability for teaching and learning the Basics; it also promotes and encourages maximum local Control.

While EOG and EOC tests permit monitoring of relative student achievement within the state, they do not permit comparisons of student performance with performance in other states. The National Assessment of Educational Progress (NAEP), first administered in North Carolina in 1990, and the Iowa Tests of Basic Skills (ITBS), first administered in North Carolina in 1993, provide the best data for comparing the performance of students in North Carolina to that of their counterparts in the nation.

The Scholastic Assessment Test (SAT), while not the best measure for comparing North Carolina's students to students nationally, is recognized as one of the most useful tools for assessing the academic preparation of individual students for post-secondary education. Consequently, national and state results for 2001 and previous years are included. Finally, state results from the Advanced Placement (AP) examinations are reported, because they have also been shown to reflect the academic preparation of individual students for post-secondary education.

National Assessment of Educational Progress (NAEP)

Background

The National Assessment of Educational Progress (NAEP), a federally mandated project, was established in 1969 to assess the educational achievement of elementary and secondary students in various subject areas. NAEP, sometimes called the “Nation’s Report Card,” is the most widely recognized effort to assess the knowledge of American students. It reports on the educational achievement of populations of students; it is not designed to produce information for individual students, teachers, schools or school districts. Every two years, NAEP assesses nationally representative samples of more than 120,000 students in public and private schools in grade 4, grade 8, and grade 12. The academic subjects assessed by NAEP, which vary from year to year, include reading, mathematics, science, writing, history, geography, and the arts.

State NAEP assessments began in 1990 in response to legislation passed by Congress. This legislation authorized a voluntary Trial State Assessment (TSA) wherein representative samples of students from each jurisdiction agreeing to participate are selected. Although the legislation still emphasizes that the state assessments are developmental, “Trial” was dropped from the title of the assessment in 1996 based on numerous evaluations of the TSA program. The sampling process is designed to ensure that reliable state-level data are obtained regarding student achievement in each participating jurisdiction. In 2000, for the first time, accommodations and adaptations were made available to special-needs students, so that students with disabilities and limited English proficiency were included in the sampling frame. To preserve comparability with previous years, NAEP reported two types of results in 2000: *where accommodations were permitted* and *where accommodations were not permitted*. Approximately 2500 students per grade are tested statewide.

Previous NAEP assessments have included grade 8 mathematics in 1990, 1992, 1996, and 2000; grade 4 mathematics in 1992, 1996 and 2000; grade 4 reading in 1992, 1994, and 1998; grade 8 science in 1996 and 2000; grade 4 science in 2000; and grade 8 writing in 1998. Future NAEP assessments are scheduled for grades 4 and 8 reading and writing (2002), grades 4 and 8 mathematics and science (2004), grades 4 and 8 reading and writing (2006) grades 4 and 8 mathematics and science (2008), and grades 4 and 8 reading and writing (2010).

NAEP uses scale scores ranging from 0 to 300 to measure student performance in science and writing and 0 to 500 in mathematics and reading. The scales summarize results across all three grades. In addition to scale scores, NAEP uses achievement levels to report results. Achievement levels are performance standards regarding what students should be expected to know and to do. NAEP’s achievement levels are based on collective judgements of a representative panel of teachers, education specialists, and members of the general public. These judgements are translated into specific points on the NAEP scale that identify boundaries between levels of achievement. NAEP’s achievement level definitions are listed in Table 1.

Table 1. Definitions of the National Assessment of Educational Progress (NAEP) Achievement Levels

Basic	This level denotes partial mastery of prerequisite knowledge and skills that are fundamental for proficient work at each grade.
Proficient	This level represents solid academic performance for each grade assessed. Students reaching this level have demonstrated competency over challenging subject matter, including subject-matter knowledge, application of such knowledge to real-world situations, and analytical skills appropriate to the subject matter.
Advanced	This level signifies superior performance.

Although achievement levels for NAEP have been required by law since 1988 (Public Law 100-297), the National Center for Education Statistics (U. S. Department of Education, 1999) has issued the following caution when interpreting NAEP achievement level data:

Upon review of the available information, the Acting Commissioner of Education Statistics agrees with the National Academy of Science (NAS) recommendation that caution needs to be exercised in the use of the current achievement levels, since in the opinion of the Academy "... appropriate validity evidence for the cut scores is lacking; and the process has produced unreasonable results." (Pilligrino et al., 1999, p. 182.) Therefore, the Acting Commissioner concludes that these achievement levels should continue to be considered developmental and should continue to be interpreted and used with caution.... The Acting Commissioner and the Governing Board believe that the achievement levels are useful for reporting trends in the educational achievement of students in the United States.

The only NAEP results for North Carolina that have not been published in previous *State of the State* reports are those for the 2000 mathematics and science assessments at grades 4 and 8. These results, which were not released early enough to be included in the 2000 *State of the State*, are included in this report. Only results *where accommodations were not permitted* are included in this report to facilitate comparisons with results from previous years. An overview of results from previous NAEP assessments in North Carolina is included in the 2000 *State of the State* report, which may be found at <http://www.ncpublicschools.org>. Additional information about NAEP can be found at the following web site: <http://nces.ed.gov/nationsreportcard/site/home.asp/>.

In the 2000 NAEP state-by-state assessment of mathematics, 47 states and other jurisdictions participated, while 45 states and other jurisdictions participated in science. Other jurisdictions included: American Samoa, Guam, the Department of Defense Domestic Dependent Elementary and Secondary Schools (DDESS), the overseas Department of Defense Schools (DoDDS), and the Virgin Islands.

The 12 states comprising the Southeast are: Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, and West Virginia.

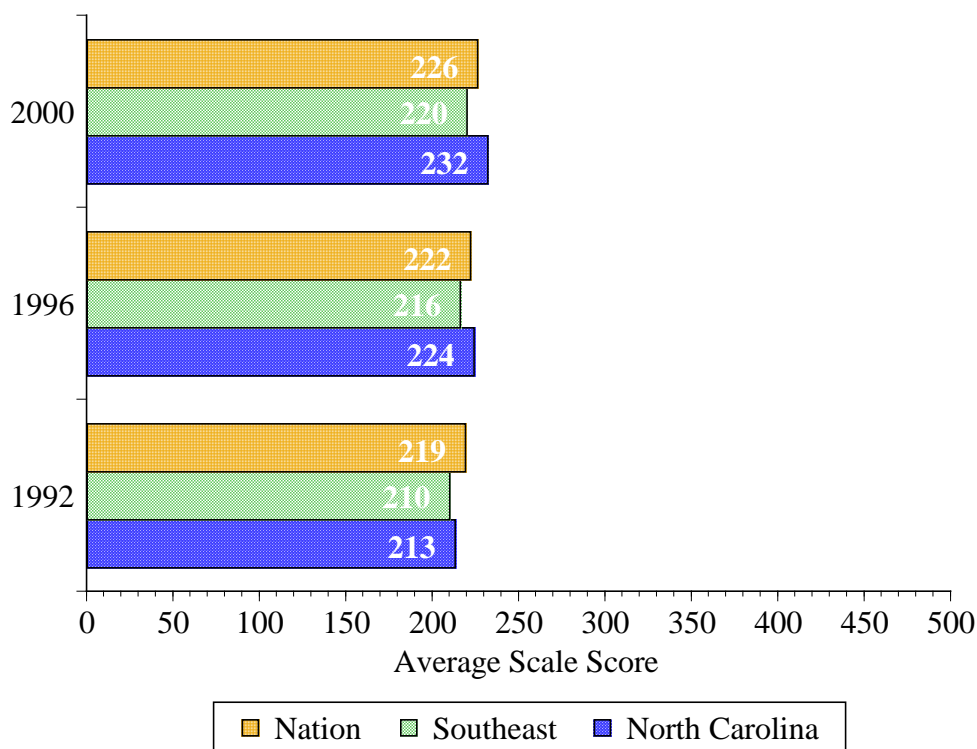
Mathematics

Grade 4 (1992, 1996, 2000)

Scale Scores

Figure 1 shows the average mathematics scale scores for grade 4 students in North Carolina, the Southeast, and the Nation, in 1992, 1996, and 2000.

- North Carolina's average scale score has increased each year since 1992, by 11 points in 1996 and by ten points in 2000.
- The state's average scale score (232) in 2000 was six points higher than the nation's average (226) and 12 points higher than the southeast's average (220).
- Among all states and jurisdictions tested, North Carolina had the largest gain since 1992 (19 points) and tied with Virginia in having the second largest gain since 1996 (8 points) [NCES, *The Nation's Report Card: Mathematics 2000*, August 2, 2001, p. 36].
- North Carolina scored as well as or better than 34 of the 40 jurisdictions participating in the assessment [NCES, *The Nation's Report Card: Mathematics 2000*, August 2, 2001, p. 36].

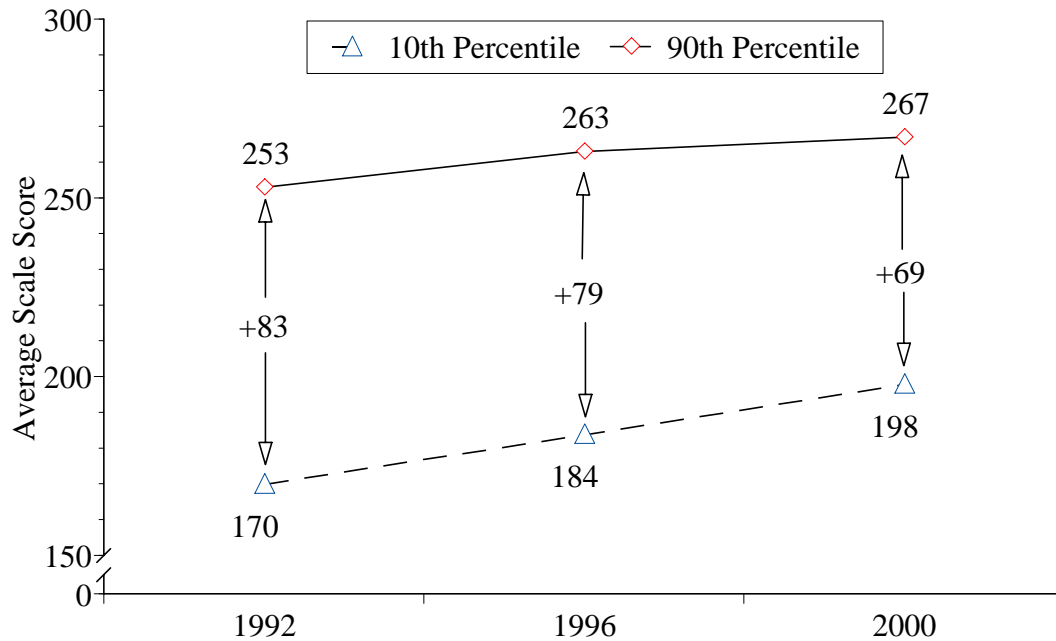


Note: The NAEP mathematics scale ranges from 0 to 500.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990-2000 Mathematics Assessments.

Figure 1. Average Mathematics Scale Scores for Grade 4 Students in North Carolina, the Southeast, and the Nation on the National Assessment of Educational Progress (NAEP), 1992-2000.

Figure 2 shows the gap between the tenth and ninetieth percentile scale scores in mathematics for North Carolina's grade 4 students from 1992 to 2000. The gap between high and low performing grade 4 students narrowed by fourteen (14) points between 1992 and 2000, with low performing students growing more rapidly than high performing students.



Note: The NAEP mathematics scale ranges from 0 to 500.

Figure 2. Gap between the Tenth and Ninetieth Percentile Scale Scores in Mathematics for North Carolina's Grade 4 Students on the National Assessment of Educational Progress (NAEP), 1992-2000.

Achievement Levels

Table 2 and Figure 3 show the percentages of public school students at grade 4 attaining NAEP's Mathematics Achievement Levels in North Carolina, the Southeast, and the nation in 1992, 1996, and 2000.

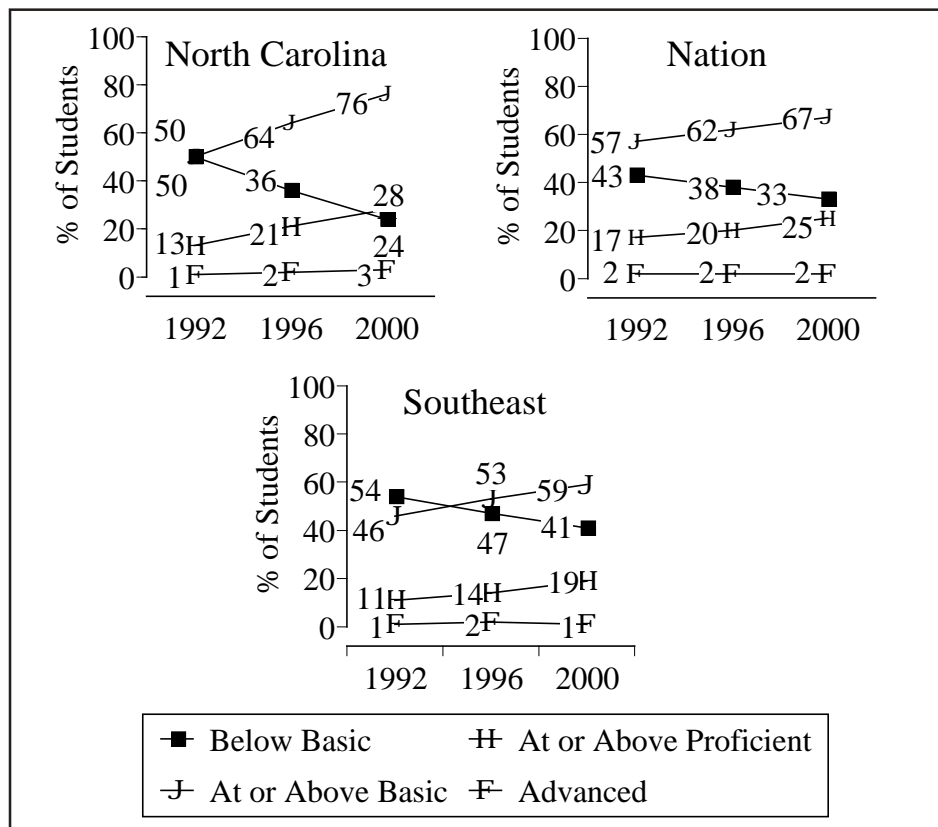
- The percentage of students performing *Below Basic* in North Carolina dropped from 50 percent in 1992 to 24 percent in 2000.
- The percentage of North Carolina's students *At or Above Basic* improved from 50 percent in 1992 to 76 percent in 2000.
- Only 13 percent of North Carolina's students were *At or Above Proficient* in 1992, but 28 percent performed that well in 2000.
- North Carolina's students performed better than the Southeast and the nation at all achievement levels in 2000.

Table 2. Percentages of Public School Grade 4 Students Attaining NAEP's Mathematics Achievement Levels in North Carolina, the Southeast, and the Nation, 1992-2000

	Below Basic	At or Above Basic	At or Above Proficient	Advanced
2000				
North Carolina	24 (1.5)	76 (1.5)	28 (1.5)	3 (0.4)
Southeast	41 (3.4)	59 (3.4)	19 (2.1)	1 (0.4)
Nation	33 (1.2)	67 (1.2)	25 (1.2)	2 (0.3)*
1996				
North Carolina	36 (1.6)*	64 (1.6)*	21 (1.3)*	2 (0.4)
Southeast	47 (3.3)	53 (3.3)	14 (2.7)	2 (0.9)
Nation	38 (1.4)*	62 (1.4)*	20 (1.0)*	2 (0.3)
1992				
North Carolina	50 (1.6)*	50 (1.6)*	13 (0.8)*	1 (0.3)
Southeast	54 (2.5)*	46 (2.5)*	11 (1.4)*	1 (0.4)
Nation	43 (1.2)*	57 (1.2)*	17 (1.1)*	2 (0.3)

Note: The NAEP mathematics scale ranges from 0 to 500. The achievement levels correspond to the following points on the NAEP mathematics scale at grade 4: *Basic*, 214-248; *Proficient*, 249-281; and *Advanced*, 282 and above. The standard errors of the statistics in the table appear in parentheses. The asterisk notation (*) signifies that this value is significantly different from the value for 2000.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990-2000 Mathematics Assessments.



Note: The NAEP mathematics scale ranges from 0 to 500.
 SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990-2000 Mathematics Assessments.

Figure 3. Percentages of Public School Grade 4 Students Attaining NAEP’s Mathematics Achievement Levels in North Carolina, the Southeast, and the Nation, 1992 - 2000.

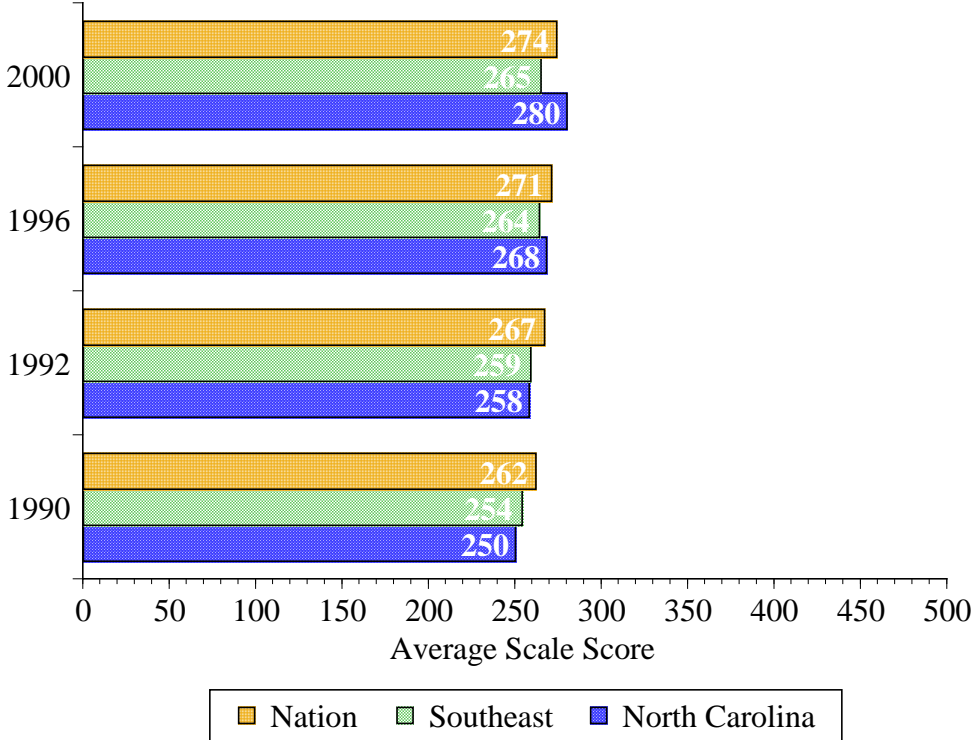
Grade 8 (1990, 1992, 1996, and 2000)

Scale Scores

Figure 4 shows the average Mathematics Scale Scores for grade 8 students in North Carolina, the Southeast, and the Nation, in 1990, 1992, 1996, and 2000.

- North Carolina’s grade 8 students have scored progressively higher on each of the three Mathematics assessments since 1990, eight points higher in 1992, ten points higher in 1996, and 12 points higher in 2000.
- The 2000 score (280) was 30 points higher than the score (250) in 1990.
- North Carolina’s score (280) in 2000 was notably higher than that for the Southeast (265) and the nation (274).
- Among all states and jurisdictions, North Carolina had the largest gain since 1990 (30 points), 1992 (22 points), and 1996 (12 points) (NCES, *The Nation’s Report Card: Mathematics 2000*, August 2, 2001, p. 37).

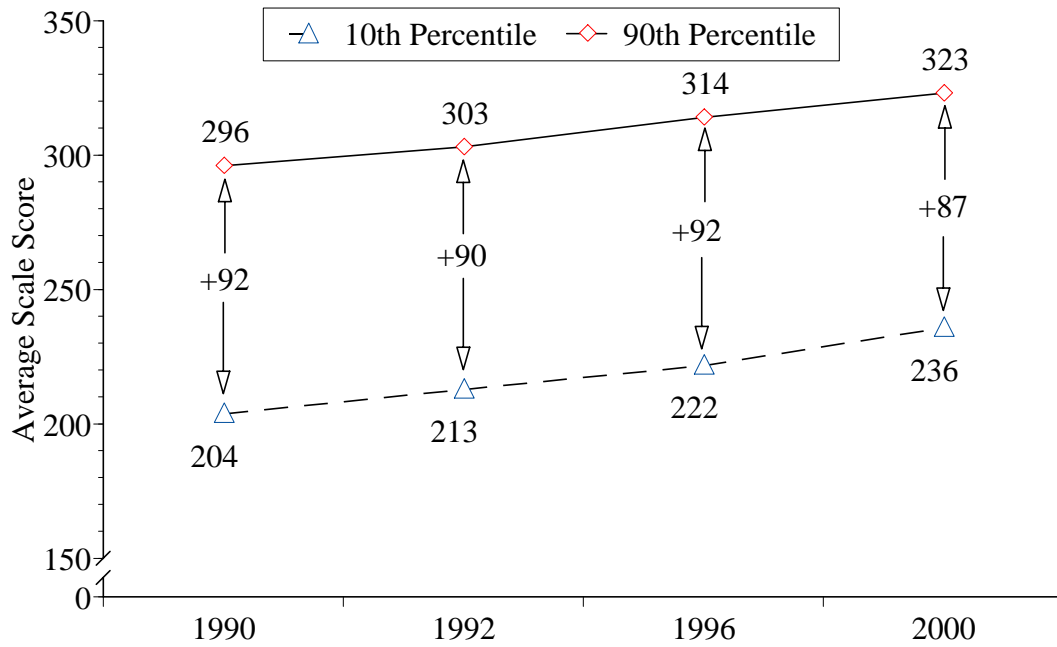
- North Carolina scored as well as or better than 39 of the 47 jurisdictions participating in the assessment [NCES, *The Nation's Report Card: Mathematics 2000*, August 2, 2001, p. 37].



Note: The NAEP mathematics scale ranges from 0 to 500.
 SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990-2000 Mathematics Assessments.

Figure 4. Average Mathematics Scale Scores for Grade 8 Students in North Carolina, the Southeast, and the Nation on the National Assessment of Educational Progress (NAEP), 1990 - 2000.

Figure 5 shows the gap between the tenth and ninetieth percentile scale scores in mathematics for North Carolina's grade 8 students from 1990 to 2000. The gap between high and low performing students narrowed by five (5) points between 1990 and 2000, with low performing students improving slightly faster than high performing students.



Note: The NAEP mathematics scale ranges from 0 to 500.
 SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990-2000 Mathematics Assessments.

Figure 5. Gap between the Tenth and Ninetieth Percentile Scale Scores in Mathematics for North Carolina’s Grade 8 Students on the National Assessment of Educational Progress (NAEP), 1990 - 2000.

Achievement Levels

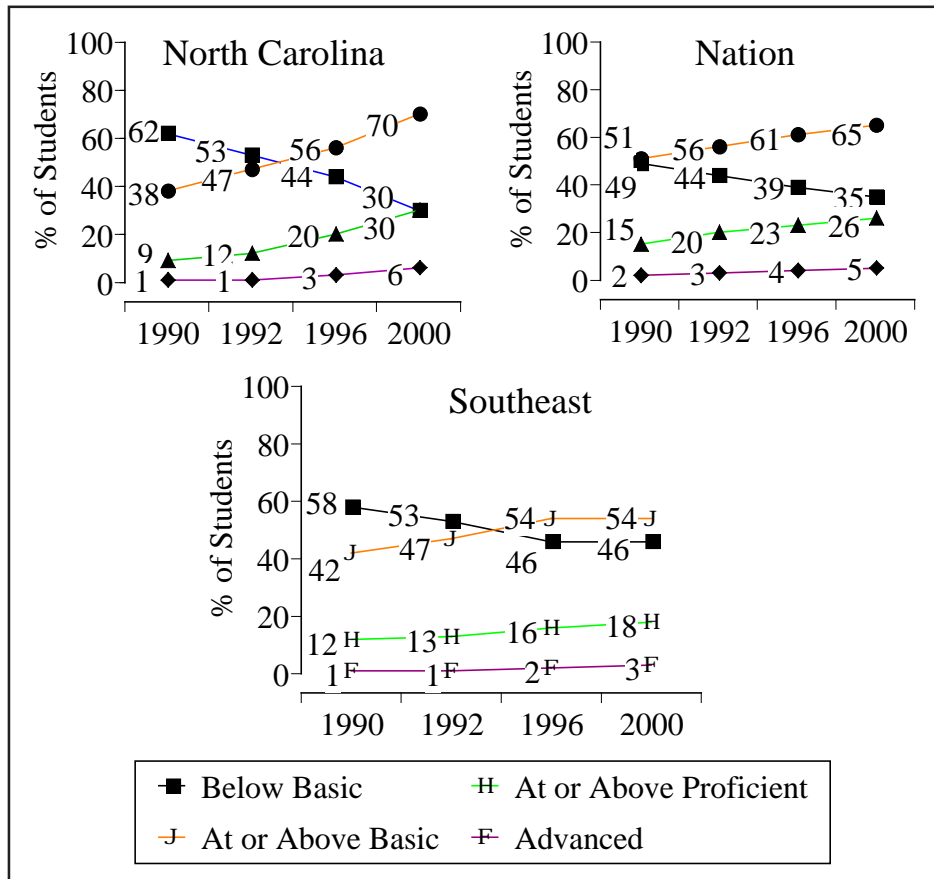
- The percentage of students performing *Below Basic* in North Carolina dropped markedly from 62 percent in 1990 to 30 percent in 2000 (see Table 3 and Figure 6).
- From 1990 to 2000, the percentage of North Carolina’s students performing at or above the *Basic* level increased from 38 percent to 70 percent.
- Only 9 percent of students were at or above proficient in 1990, compared to 30 percent in 2000.
- As was the case with grade 4 students, North Carolina’s grade 8 students performed better than the Southeast and the nation at all achievement levels in 2000.

Table 3. Percentages of Public School Grade 8 Students Attaining NAEP's Mathematics Achievement Levels in North Carolina, the Southeast, and the Nation: 1990 to 2000

	Below Basic	At or Above		
		Basic	Proficient	Advanced
2000				
North Carolina	30 (1.3)	70 (1.3)	30 (1.3)	6 (0.7)
Southeast	46 (1.8)	54 (1.8)	18 (1.3)	3 (0.5)
Nation	35 (0.9)	65 (0.9)	26 (1.0)	5 (0.5)
1996				
North Carolina	44 (1.8)*	56 (1.8)*	20 (1.3)*	3 (0.6)*
Southeast	46 (3.5)	54 (3.5)	16 (2.2)	2 (0.7)
Nation	39 (1.3)*	61 (1.3)*	23 (1.2)*	4 (0.6)
1992				
North Carolina	53 (1.4)*	47 (1.4)*	12 (1.0)*	1 (0.3)*
Southeast	53 (1.8)*	47 (1.8)*	13 (1.0)*	1 (0.3)*
Nation	44 (1.2)*	56 (1.2)*	20 (1.0)*	3 (0.4)*
1990				
North Carolina	62 (146)*	38 (1.4)*	9 (0.7)*	1 (0.3)*
Southeast	58 (2.7)*	42 (2.7)*	12 (2.2)*	1 (0.5)*
Nation	49 (1.5)*	51 (1.5)*	15 (1.1)*	2 (0.4)*

NOTE: The NAEP mathematics scale ranges from 0 to 500. The achievement levels correspond to the following points on the NAEP mathematics scale at grade 8: *Basic*, 262-298; *Proficient*, 299-332; and *Advanced*, 333 and above. The standard errors of the statistics in the table appear in parentheses. The asterisk notation (*) signifies that this value is significantly different from the value for 2000.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990-2000 Mathematics Assessments.



Note: The NAEP mathematics scale ranges from 0 to 500.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990-2000 Mathematics Assessments.

Figure 6. Percentages of Public School Grade 8 Students Attaining NAEP’s Mathematics Achievement Levels in North Carolina, the Southeast, and the Nation, 1990 - 2000.

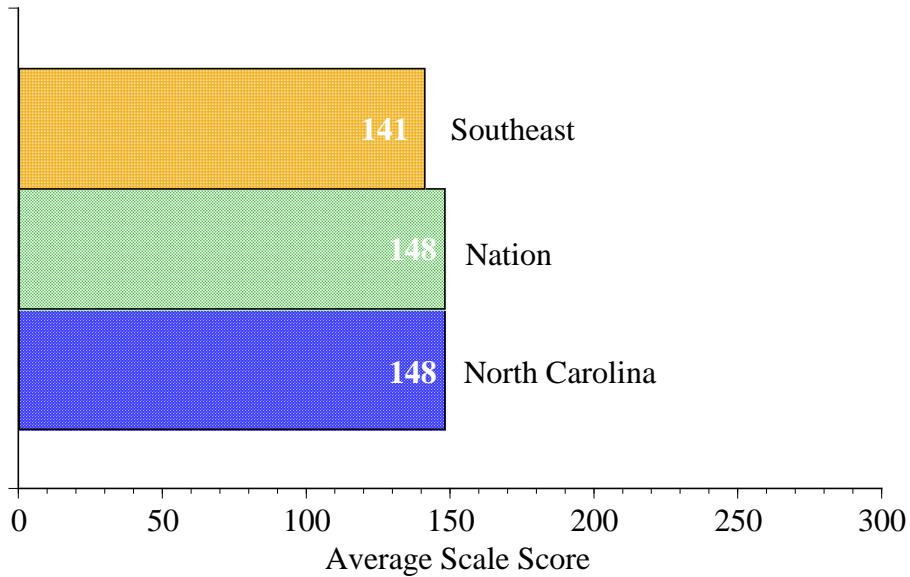
Science

Grade 4 (2000)

Scale Scores

Figure 7 shows the average Science Scale Scores for grade 4 students in North Carolina, the Southeast, and the Nation in 2000. No previous NAEP grade 4 assessments of science had been administered in North Carolina.

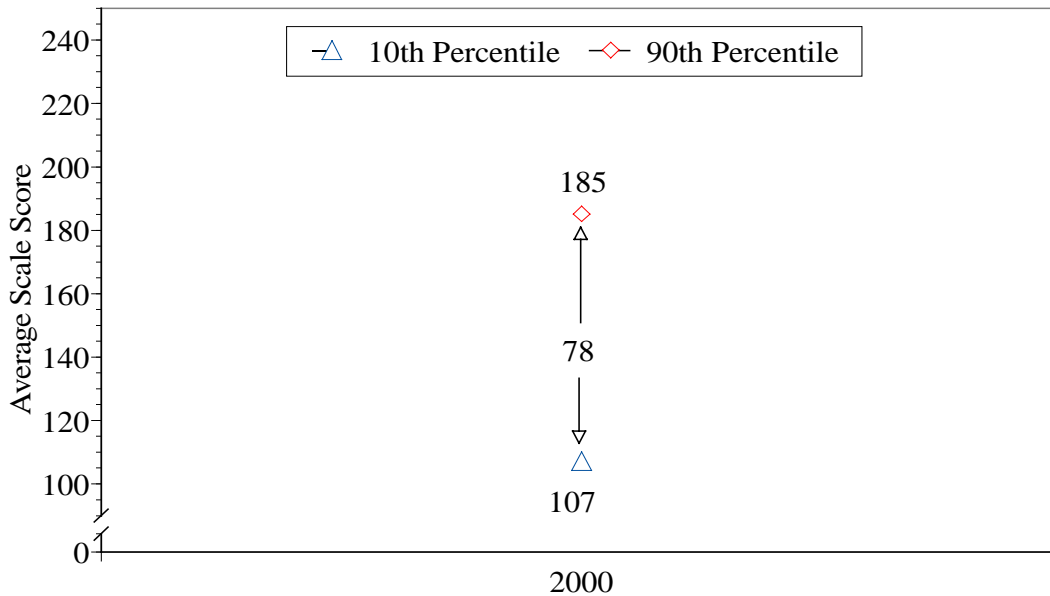
- North Carolina’s average scale score (148) tied the nation’s score and exceeded the Southeast score by seven points.
- North Carolina’s students scored higher than counterparts in 13 states and other jurisdictions, not significantly different from those from 11 states and other jurisdictions, and lower than those in 19 states and other jurisdictions (National Center for Educational Statistics, National Assessment of Educational Progress [NAEP], 2000 Science Assessment).



Note: The NAEP science scale ranges from 0 to 300.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990-2000 Science Assessments.

Figure 7. Average Science Scale Scores for Grade 4 Students in North Carolina, the Southeast, and the Nation on the National Assessment of Educational Progress (NAEP), 2000.

Figure 8 shows the gap between scale scores at the tenth and ninetieth percentiles in science for North Carolina's grade 4 students in 2000. The 78 point difference between high and low performing grade 4 students in North Carolina will serve as the baseline for subsequent NAEP assessments of grade 4 science in the state.



Note: The NAEP science scale ranges from 0 to 300.
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Science Assessment.

Figure 8. Gap between the Tenth and Ninetieth Percentile Scale Scores in Science for North Carolina's Grade 4 Students on the National Assessment of Educational Progress (NAEP), 2000.

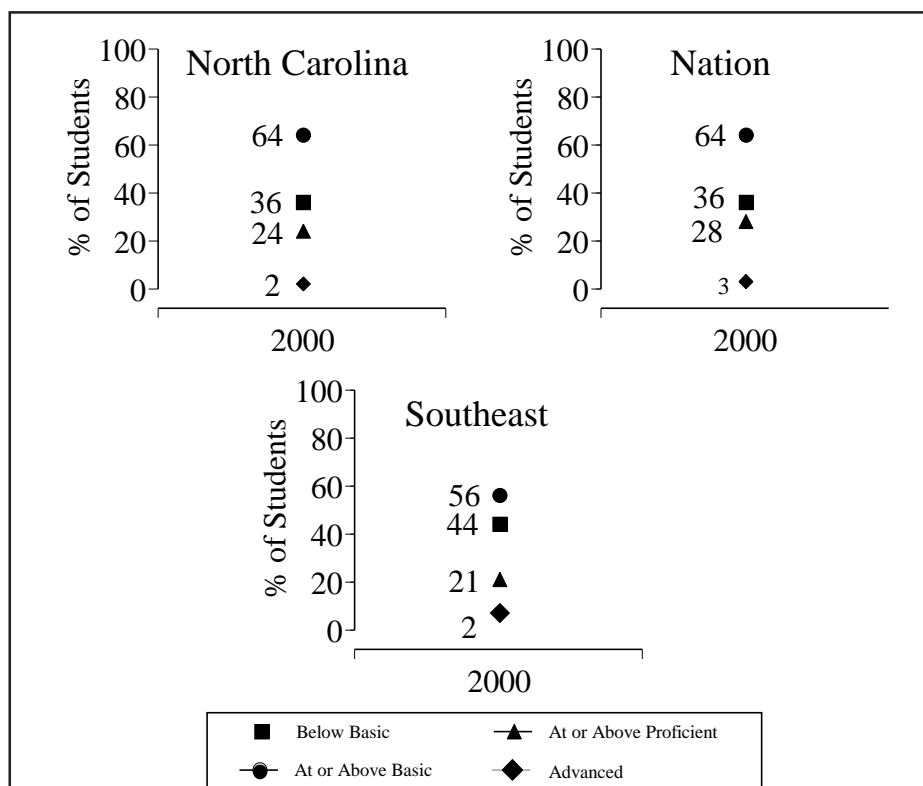
Achievement Levels

The percentage of North Carolina's grade 4 students performing at or above the *Proficient* level in 2000 (24 percent) exceeded that of counterparts in the Southeast (21) but was four points lower than counterparts in the nation (28) as shown in Table 4 and Figure 9.

Table 4. Percentages of Public School Grade 4 Students Attaining NAEP's Science Achievement Levels in North Carolina, the Southeast, and the Nation, 2000

	Below Basic	At or Above	At or Above	
		Basic	Proficient	Advanced
2000				
North Carolina	36 (1.9)	64 (1.9)	24 (1.4)	2 (0.5)
Southeast	44 (2.2)	56 (2.2)	21 (1.4)	2 (0.5)
Nation	36 (0.9)	64 (0.9)	28 (0.9)	3 (0.3)

Figure 9 shows graphically that grade 4 students in North Carolina and the nation performed similarly in science, with the exception that four percent more grade 4 students in the nation performed at or above the *Proficient* level.



Note: The NAEP science scale ranges from 0 to 300.

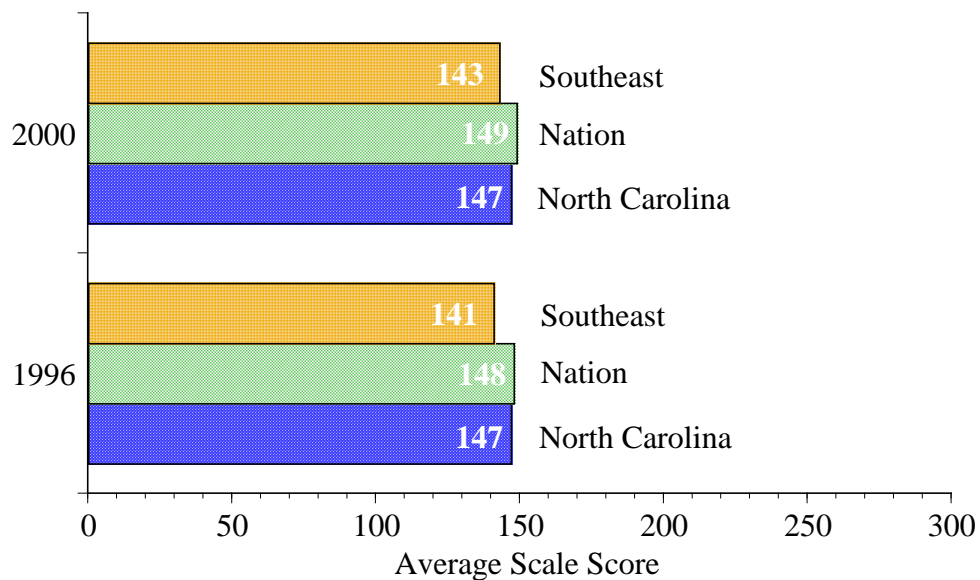
SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Science Assessment.

Figure 9. Percentages of Public School Grade 4 Students Attaining NAEP's Science Achievement Levels in North Carolina, the Southeast, and the Nation, 2000.

Grade 8 (1996, 2000)

Scale Scores

- The average scale score (147) for North Carolina's grade 8 students in 2000 equalled the 1996 score (see Figure 10).
- North Carolina's average scale score was four points higher than the Southeast score and was two points below the national average in 2000 (see Figure 10).
- Ten states and other jurisdictions attained average scale scores lower than North Carolina's score in 2000 (National Center for Educational Statistics, National Assessment of Educational Progress [NAEP], 2000 Science Assessment).

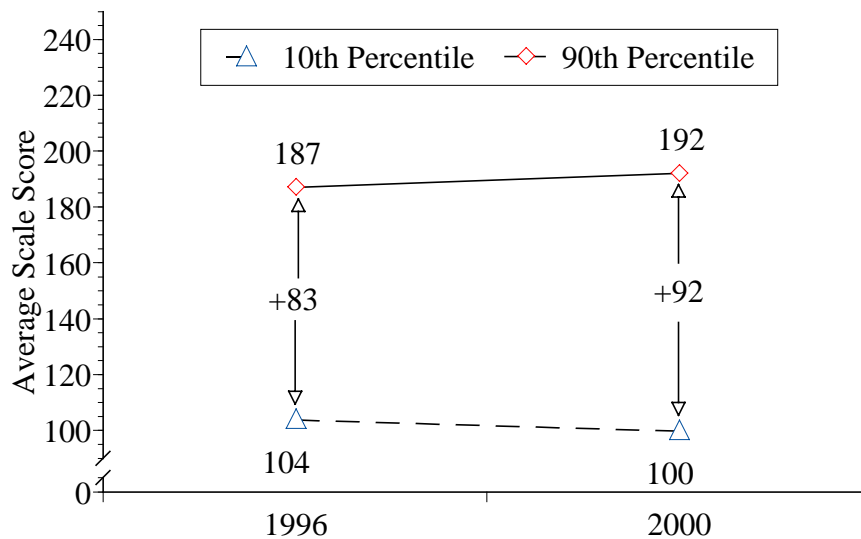


Note: The NAEP science scale ranges from 0 to 300.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2000 Science Assessment.

Figure 10. Average Science Scale Scores for Grade 8 Students in North Carolina, the Southeast, and the Nation on the National Assessment of Educational Progress (NAEP), 1996-2000.

Figure 11 shows the gap between scale scores at the tenth and ninetieth percentiles in science for North Carolina's grade 8 students in 1996 and 2000. Between 1996 and 2000, the gap between the average scale scores of the lowest performing students and highest performing students *increased* by nine points. In contrast, the gap between the average scale scores of the lowest and highest performing students in mathematics *decreased* by five points during the same period.



Note: The NAEP science scale ranges from 0 to 300.
 SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 and 2000 Science Assessment.

Figure 11. Gap between the Tenth and Ninetieth Percentile Scale Scores in Science for North Carolina's Grade 8 Students on the National Assessment of Educational Progress (NAEP), 1996 - 2000.

Achievement Levels

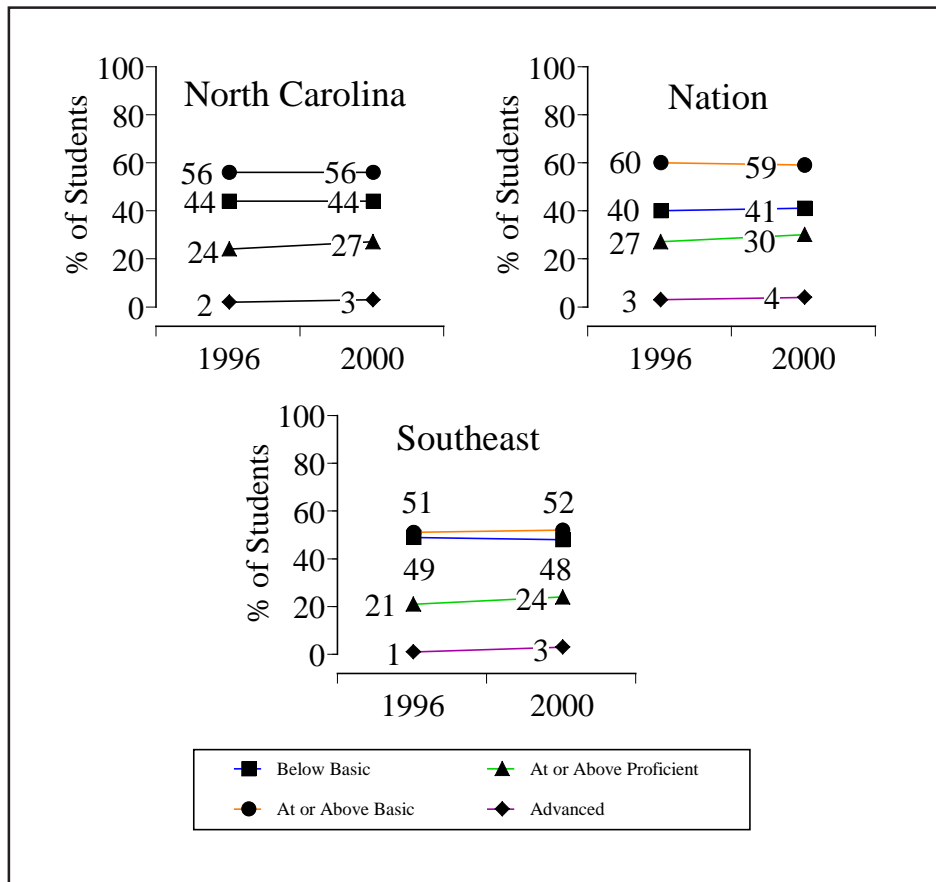
The percentage of North Carolina's grade 8 students performing at or above the *Proficient* level in 2000 (27 percent) exceeded that of counterparts in the Southeast (24 percent) by three points but lagged counterparts in the nation by three points (see Table 5 and Figure 12).

Table 5. Percentages of Public School Grade 8 Students Attaining NAEP's Science Achievement Levels in North Carolina, the Southeast, and the Nation, 1996-2000

	Below Basic	At or Above		
		Basic	Proficient	Advanced
2000				
North Carolina	44 (1.9)	56 (1.9)	27 (1.6)	3 (0.6)
Southeast	48 (1.9)	52 (1.9)	24 (1.4)	3 (0.5)
Nation	41 (0.9)	59 (0.9)	30 (0.9)	4 (0.4)
1996				
North Carolina	44 (1.5)	56 (1.5)	24 (1.4)	2 (0.3)*
Southeast	49 (2.6)	51 (2.6)	21 (1.7)	1 (0.3)*
Nation	40 (1.1)	60 (1.1)	27 (1.3)	3 (0.5)

NOTE: The NAEP science scale ranges from 0 to 300. The achievement levels correspond to the following points on the NAEP science scale at grade 8: *Basic*, 143-169; *Proficient*, 170-207; and *Advanced*, 208 and above. The standard errors of the statistics in the table appear in parentheses. The notation * signifies that this value is significantly different from the value for 2000.

SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 and 2000 Science Assessments.



Note: The NAEP science scale ranges from 0 to 300.
 SOURCE: National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1996 and 2000 Science Assessment.

Figure 12. Percentages of Public School Grade 8 Students Attaining NAEP’s Science Achievement Levels in North Carolina, the Southeast, and the Nation, 1996-2000.

NAEP Summary

North Carolina's grades 4 and 8 students have shown continuous progress in all NAEP subjects (see Table 6). Since 1994, North Carolina has scored higher than the Southeast on all assessments and higher than the nation on all assessments except grade 8 mathematics (scoring three points lower in 1996), grade 4 science (tying the nation in 2000), and grade 8 science (scoring one point lower in 1996 and two points lower in 2000). These results indicate that the North Carolina system of public education is incorporating strategies and programs that promote student achievement. Primary among such strategies and programs have been: (1) the aligning of the North Carolina curriculum with national standards, (2) the focusing of classroom instruction on the new curriculum, (3) the development of a highly aligned assessment system, and (4) the evolution of high stakes accountability standards for schools and school districts in the state.

Table 6. Summary of NAEP Average Scale Scores in Reading, Writing, Mathematics, and Science for North Carolina, the Southeast, and the Nation, 1990-2000

	Average Scale Scores					
	1990	1992	1994	1996	1998	2000
Reading (Grade 4)						
North Carolina	***	212	214	***	217	***
Southeast	***	211	208	***	210	***
Nation	***	215	212	***	215	***
Reading (Grade 8)						
North Carolina	***	***	***	***	264	***
Southeast	***	***	***	***	258	***
Nation	***	***	***	***	261	***
Writing (Grade 8)						
North Carolina	***	***	***	***	150	***
Southeast	***	***	***	***	143	***
Nation	***	***	***	***	148	***
Math (Grade 4)						
North Carolina	***	213	***	224	***	232
Southeast	***	210	***	216	***	220
Nation	***	219	***	222	***	226
Math (Grade 8)						
North Carolina	250	258	***	268	***	280
Southeast	254	259	***	264	***	265
Nation	262	267	***	271	***	274
Science (Grade 4)						
North Carolina	***	***	***	***	***	148
Southeast	***	***	***	***	***	141
Nation	***	***	***	***	***	148
Science (Grade 8)						
North Carolina	***	***	***	147	***	147
Southeast	***	***	***	141	***	143
Nation	***	***	***	148	***	149

***No NAEP was administered.

Note: The NAEP writing and science scales range from 0 to 300; the NAEP reading and mathematics scales range from 0 to 500.

Iowa Tests of Basic Skills (ITBS)

Background

The State Board of Education approved the ITBS as a component of the state testing program in 1992 to permit the comparison of North Carolina's student achievement with national indicators. The ITBS has been administered annually in North Carolina since the Spring of 1993 to representative samples of students (between 2400 and 2600 students per grade) in grades 5 and 8. No school or school system scores are available. The ITBS replaced the previously used California Achievement Tests (CAT) for several reasons. First, it was more closely aligned with the mandated statewide curriculum. Second, it placed greater emphasis on higher-order thinking skills. Third, it was more closely aligned with national curriculum standards.

The components of the ITBS Survey Battery are Reading, Language, and Mathematics. The Reading test consists of two parts, Vocabulary and Reading Comprehension. While the Reading Total Skills score is based on the entire test, the Reading Advanced Skills score is based only on Reading Comprehension items.

The Language test consists of five parts: Spelling, Capitalization, Punctuation, Usage, and Expression. The Language Total Skills score includes all five parts, and the Language Advanced Skills score is based on two parts, Usage and Expression.

The Mathematics test includes four parts (Concepts, Estimation, Problem Solving, and Data Interpretation) plus a computation test. The Mathematics Total score is based on all five parts; the Mathematics Advanced Skills score is based on the Estimation, Problem Solving, and Data Interpretation parts.

Each student's Survey Battery Total score is the average of each student's standard score for the three tests. For example, the average of the Reading Total, Language Total, and Mathematics Total standard scores yields the Survey Battery Total standard score for each student.

The score types usually reported in ITBS reports are: Mean Standard Score, Grade Equivalent of Average Standard Score, Median Standard Score, Median National Percentile Rank, and Normal Curve Equivalent (NCE). ITBS results are reported below as median National Percentile Ranks (NPRs) of the developmental standard scores and are referenced to 1995 ITBS national student norms. NPRs permit the comparison of North Carolina's students with representative groups of students in the nation. When interpreting results from various sources, one should ensure that similar types of scores are being compared, since the different types of scores are not directly comparable.

The Iowa Tests of Basic Skills (ITBS) will be eliminated from the North Carolina state testing program beginning in the 2001-02 school year. The basis of this decision by the North Carolina State Board of Education was two-fold: (1) to allay public concern regarding excessive testing and (2) to accommodate pressing budgetary constraints.

Grade 5

Total Skills

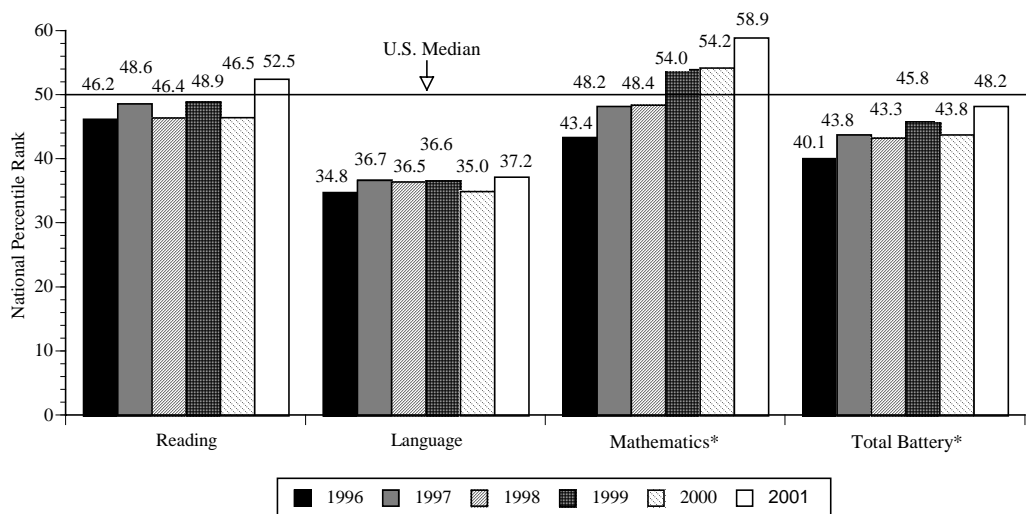
The NPRs in Total Skills for North Carolina's grade 5 students on the ITBS from 1996 to 2001 are shown in Figure 13. Grade 5 students scored higher in all total skill areas in 2001 than in any year since 1996.

For the first time in six years, grade 5 students scored above the U. S. Median in Reading Total Skills. Prior to 2001, grade 5 students had scored lower than the U. S. Median in this skill area.

In Language, scores continued to lag considerably below the U. S. Median. However, the 2001 performance represented a positive upward movement.

The 2001 performance in Mathematics Total Skills represented the sixth consecutive year of improved scores. This result marked the third consecutive year of scoring above the U. S. median by Grade 5 students.

The Total Battery score in 2001 was less than two points below the U. S. Median. This score represented an eight point increase from 1996.



*Without mathematics computation.

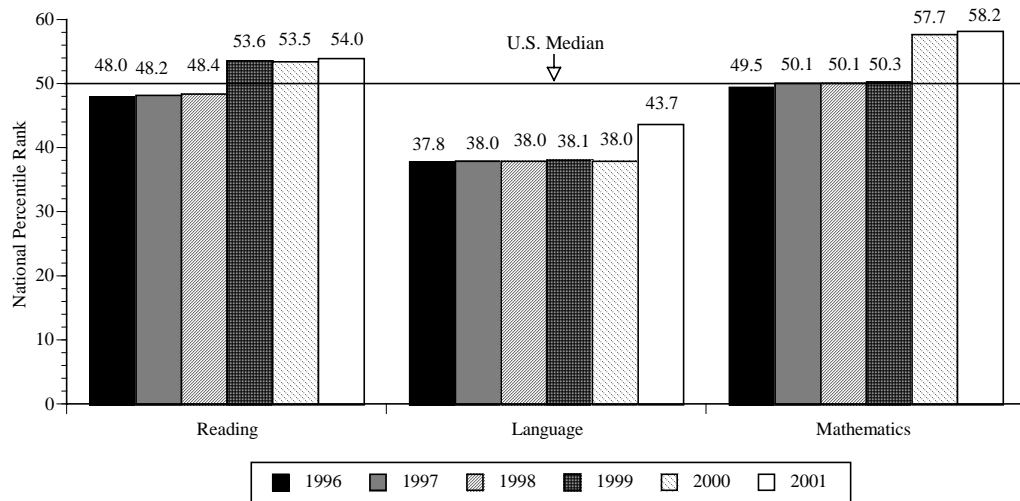
Note: Referenced to 1995 national student norms.

Figure 13. National Percentile Ranks (NPRs) in Total Skills for North Carolina's Grade 5 Students on the Iowa Tests of Basic Skills (ITBS), 1996-2001.

Advanced Skills

The NPRs in Advanced Skills for North Carolina's grade 5 students on the ITBS from 1996 to 2001 are shown in Figure 14. The scores improved in all skill areas from the previous year and represented the best performance ever in those areas.

The performance of Grade 5 students in Language Advanced Skills continued to be low in 2001 but the nearly six point increase from the previous year was a dramatic shift in the direction of the U. S. Median.



Note: Reference to 1995 national student norms.

Figure 14. National Percentile Ranks (NPRs) in Advanced Skills for North Carolina's Grade 5 Students on the Iowa Tests of Basic Skills (ITBS), 1996-2001.

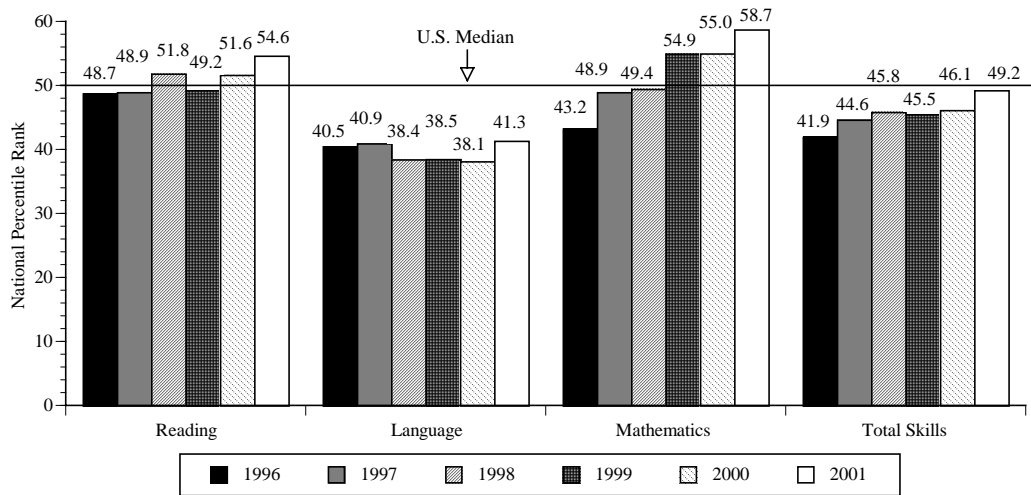
Grade 8

Total Skills

The NPRs in Total Skills for North Carolina's grade 8 students on the ITBS from 1996 to 2001 are shown in Figure 15. Grade 8 students made notable improvement in all skills areas in 2001, scoring at or near the national median in all areas except Language Total Skills (LTS). The score in LTS, while higher than in previous years, was still nearly nine points below the national median.

In Mathematics Total Skills, grade 8 students exceeded their impressive performance of the previous year and scored well over the national average.

Grade 8 students raised their score in Reading from the previous year, scoring nearly five points above the U. S. Median.



*Without mathematics computation.

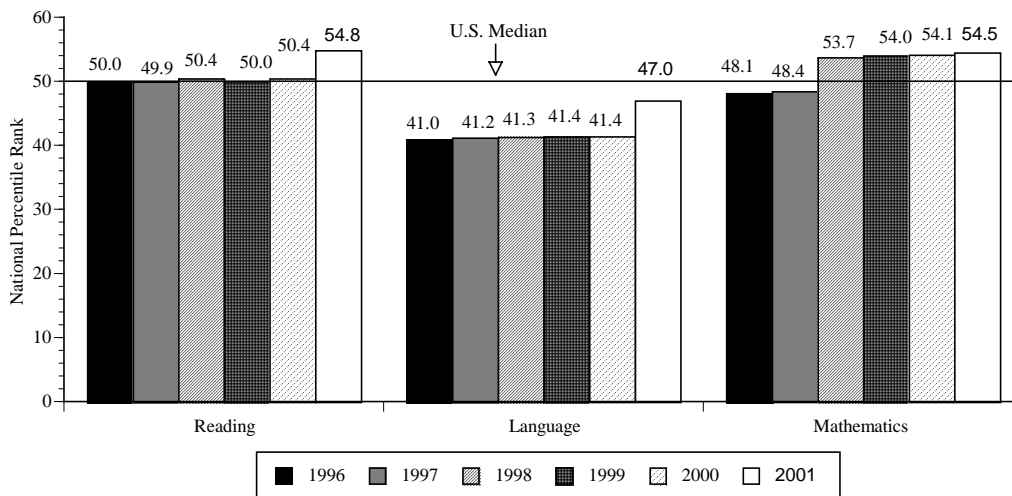
Note: Referenced to 1995 national student norms.

Figure 15. National Percentile Ranks (NPRs) in Total Skills for North Carolina's Grade 8 Students on the Iowa Tests of Basic Skills (ITBS), 1996-2001.

Advanced Skills

Figure 16 shows the NPRs in Advanced Skills for North Carolina's Grade 8 students on the ITBS from 1996 to 2001. Grade 8 students improved performance from the previous year in all skill areas.

In Language Advanced Skills, Grade 8 students have performed consistently below the U. S. median (nine points below on average). In 2001, the Language score improved markedly and was just three points below the U. S. Median.



Note: Referenced to 1995 national student norms.

Figure 16. National Percentile Ranks (NPRs) in Advanced Skills for North Carolina's Grade 8 Students on the Iowa Tests of Basic Skills (ITBS), 1996-2001.

ITBS Summary

The performances of North Carolina's grade 5 and grade 8 students in reading and mathematics total and advanced skills have been at or near the U. S. average from 1996 to 2001 (see Tables 7 and 8). The 2001 results showed overall progress in all advanced skills and total skills subtests at grades 5 and 8, including language. On the other hand, total and advanced language skills scores have been below the U. S. average during the same period, probably due to differences between North Carolina's instructional focus and the ITBS language skills tests.

For example, in recent years, North Carolina's primary instructional focus has been on composing skills and the presentation of ideas, with less emphasis on standard English conventions such as grammar, spelling, usage, and sentence formation. The lowered language convention scores for grades 4 and 7 on recent North Carolina writing assessments might also be associated with this trend. Similarly, the ITBS language skills tests assess students' ability to apply the fundamental conventions of standard written English, i.e. grammatical conventions such as spelling, capitalization, punctuation, usage and expression. The latter two comprise the advanced language skills score.

Since language usage and expression are more closely related to the presentation of ideas, ITBS advanced language skills scores are slightly higher than total language skills for both grade 5 and grade 8 students. This result is consistent with the current focus of writing instruction in the state. However, the limited emphasis on the fundamental conventions of writing may have resulted in overall lowered ITBS language scores.

The results suggest that in addition to emphasis on developing and composing written ideas, additional emphasis should be placed on the fundamental conventions of written expression. Plans are underway to ensure that North Carolina's students develop such competencies. The Revised English/Language Arts Standard Course of Study, which is scheduled for implementation in 2001, contains grammar goals at each grade level. This refocusing on the fundamental conventions of written expression should result in increased scores on assessments of language skills for North Carolina's students.

Table 7. Summary of National Percentile Ranks (NPRs) in the Various Skill Areas of the Iowa Tests of Basic Skills (ITBS), North Carolina's Grade 5, 1996-2001

Tests	National Percentile Ranks (NPRs)					
	1996	1997	1998	1999	2000	2001
Reading Total Skills	46.2	48.6	46.4	48.9	46.5	52.5
Reading Advanced Skills	48.0	48.2	48.4	53.6	53.5	54.0
Language Total Skills	34.8	36.7	36.5	36.6	35.0	37.2
Language Advanced Skills	37.8	38.0	38.0	38.1	38.0	43.7
Mathematics Total Skills*	43.4	48.2	48.4	54.0	54.2	58.9
Mathematics Advanced Skills	49.5	50.1	50.1	50.3	57.7	58.2
Survey Battery Total*	40.1	43.8	43.3	45.8	43.8	48.2

*Without mathematics computations.

Note: All scores are referenced to 1995 norms.

Table 8. Summary of National Percentile Ranks (NPRs) in the Various Skill Areas of the Iowa Tests of Basic Skills (ITBS), North Carolina's Grade 8, 1996-2001

Tests	National Percentile Ranks (NPRs)					
	1996	1997	1998	1999	2000	2001
Reading Total Skills	48.7	48.9	51.8	49.2	51.6	54.6
Reading Advanced Skills	50.0	49.9	50.4	50.0	50.4	54.8
Language Total Skills	40.5	40.9	38.4	38.5	38.1	41.3
Language Advanced Skills	41.0	41.2	41.3	41.4	41.4	47.0
Mathematics Total Skills*	43.2	48.9	49.4	54.9	55.0	58.7
Mathematics Advanced Skills	48.1	48.4	53.7	54.0	54.1	54.5
Survey Battery Total*	41.9	44.6	45.8	45.5	46.1	49.2

*Without mathematics computations.

Note: All scores are referenced to 1995 norms.

Scholastic Assessment Test (SAT)

Background

The Scholastic Assessment Test (SAT) is recognized as a useful tool for evaluating developmental verbal and mathematical abilities in individual students and in assessing their academic preparation for college admissions. Even with some criticism it has received regarding its fairness and efficacy (Jacobs, 1995), the SAT continues to be taken widely by students in North Carolina and the nation.

One function of the SAT is to provide scores to colleges and universities for assessing the academic preparation of college-bound students. In this regard, the College Board (1988) cautions that “using these scores in aggregate form as a single measure to rank or rate teachers, educational institutions, districts, or states is invalid because it does not include all students...in being incomplete, this use is inherently unfair.” However, the Board sanctions the use of average SAT scores from a number of years to “reveal trends in academic preparation of students who take the test” (The College Board, 1988). SAT scores, the Board maintains, “can provide individual states and schools with a means of self-evaluation and self-comparison.”

Students in North Carolina have shown steady improvement on the SAT each year since 1989. Since that time, teachers, principals, and policy-makers have focused on improving the quality of instruction, especially in content areas closely related to material included on the SAT.

A new version of the SAT was administered in March 1994. The scores from the new test were equated with scores from the previous test. All scores in this report have been equated with the new test. Consequently, 1995 scores in this report differ numerically from those for that year shown in the 1995 edition of *State of the State*.

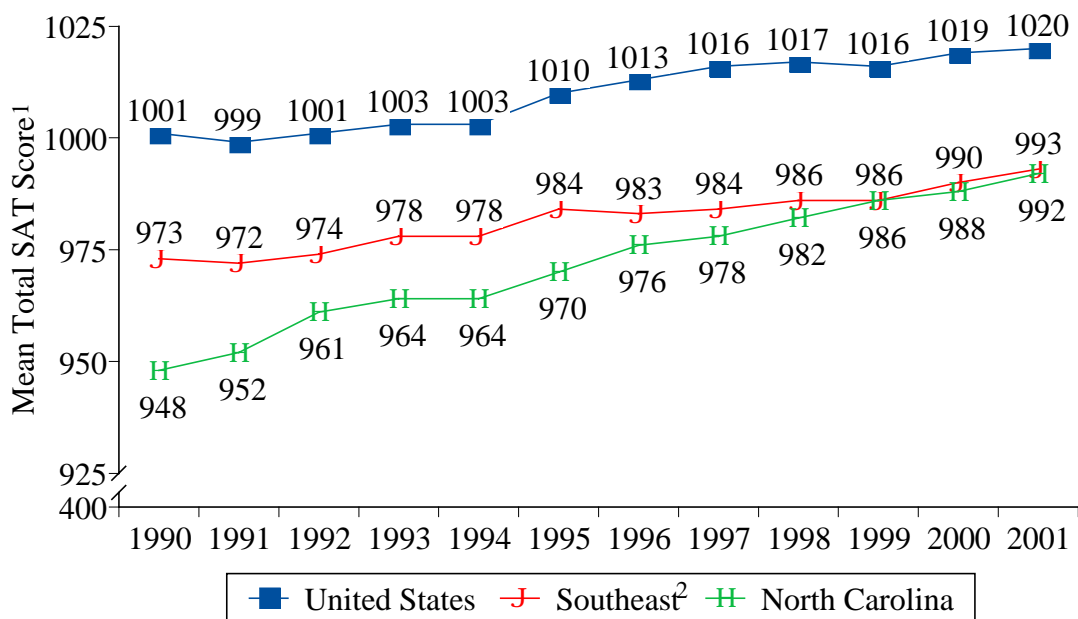
Statewide Performance

The SAT results reported in this section represent the performance of *public and non-public school students* in North Carolina and the United States scheduled to graduate in 2001. North Carolina's results include the performance of students in public schools, non-public schools, charter schools, the North Carolina School of the Arts, and the North Carolina School of Science and Mathematics.

With about a three percent increase in total test takers from the previous year, North Carolina's mean total SAT score (992) increased four points in 2001 (see Figure 17). Students in the nation scored 1020 in 2001, one point more than in the previous year. Thus, North Carolina gained three points on the nation in 2001. The state has improved its score each year since 1990, except in 1994 when there was no change. From 1991 to 2001, North Carolina gained more points (40) than any other state where more than 12 percent of students took the test (Department of Public Instruction, SAT Report, 2001).

Among the "SAT States" (those states with more than 50 percent test takers), North Carolina's 40 point gain since 1991 was also the largest. The 28 point gap between North Carolina's mean and the nation's mean in 2001 represents a narrowing of nearly 50 percent since 1990 (when the gap was 53 points) and over 66 percent since 1972 when the gap was 83 points (see Table 9).

The Southeast mean (993) increased three points in 2001 from the previous year. However, the gap between SAT scores in North Carolina and the Southeast has closed dramatically since 1990. Equaling the Southeast score in 1999 at 986, North Carolina scored two points lower (988) than in the Southeast in 2000 and just one point lower (992) in 2001.



¹All Scholastic Assessment Test scores are reported on the recentered score scale (1995).

²The Southeast region average is a weighted average of results for Florida, Georgia, North Carolina, South Carolina, and Virginia.

Figure 17. Mean Total SAT Scores for North Carolina, the Southeast, and the United States, 1990-2001.

Table 9. Mean (Average) SAT Scores for North Carolina and the Nation, 1972-2001

Year	United States			North Carolina			Gap
	Verbal	Math	Total	Verbal	Math	Total	
2001	506	514	1020	493	499	992	28
2000	505	514	1019	492	496	988	31
1999	505	511	1016	493	493	986	30
1998	505	512	1017	490	492	982	35
1997	505	511	1016	490	488	978	38
1996	505	508	1013	490	486	976	37
1995	504	506	1010	488	482	970	40
1994	499	504	1003	482	482	964	39
1993	500	503	1003	483	481	964	39
1992	500	501	1001	482	479	961	40
1991	499	500	999	478	474	952	47
1990	500	501	1001	478	470	948	53
1989	504	502	1006	474	469	943	63
1988	505	501	1006	478	470	948	58
1987	507	501	1008	477	468	945	63
1986	509	500	1009	477	465	942	67
1985	509	500	1009	476	464	940	69
1984	504	497	1001	473	461	934	67
1983	503	494	997	472	460	932	65
1982	504	493	997	474	460	934	63
1981	502	492	994	469	456	925	69
1980	502	492	994	471	458	929	65
1979	505	493	998	471	455	926	72
1978	507	494	1001	468	453	921	80
1977	507	496	1003	472	454	926	77
1976	509	497	1006	474	452	926	80
1975	512	498	1010	477	457	934	76
1974	521	505	1026	488	466	954	72
1973	523	506	1029	487	468	955	74
1972	530	509	1039	489	467	956	83

Notes:

1. Gap is the national mean total SAT score minus North Carolina's mean total SAT score.
2. The national and North Carolina mean scores include both public and nonpublic school students.
3. All Scholastic Assessment Test scores are reported on the recentered score scale (1995).
4. For 1972-1986, an Educational Testing Service conversion table was applied to the original North Carolina means to convert them to the recentered scales.

Participation Rate

Among states in the nation, the percent of seniors taking the SAT in 2000 ranged from four percent in Mississippi, North Dakota and South Dakota to 82 percent in Connecticut (The College Board, 2001, p. 6). Twenty-four states, including North Carolina, had 40 percent or more graduating seniors taking the SAT. Of these 24 states, seven had average total SAT scores of less than 1000, compared with 15 the previous year. None of the 27 territories with less than 40 percent of seniors taking the SAT had an average total SAT score of less than 1000.

Research suggests that, among states, SAT participation rate is inversely related to average total SAT score, i.e. the higher the participation rate, the lower the average total score (Powell and Steelman, 1996). Evidence of this relationship is shown in Figure 18. Those states with the lowest percent of SAT test takers attained the highest average total SAT scores, especially those states with participation rates below 40 percent. However, when the percent of SAT test takers is plotted against average total SAT scores for public school systems and public schools in North Carolina, such an inverse relation does not exist as was shown in previous *State of the State* reports.

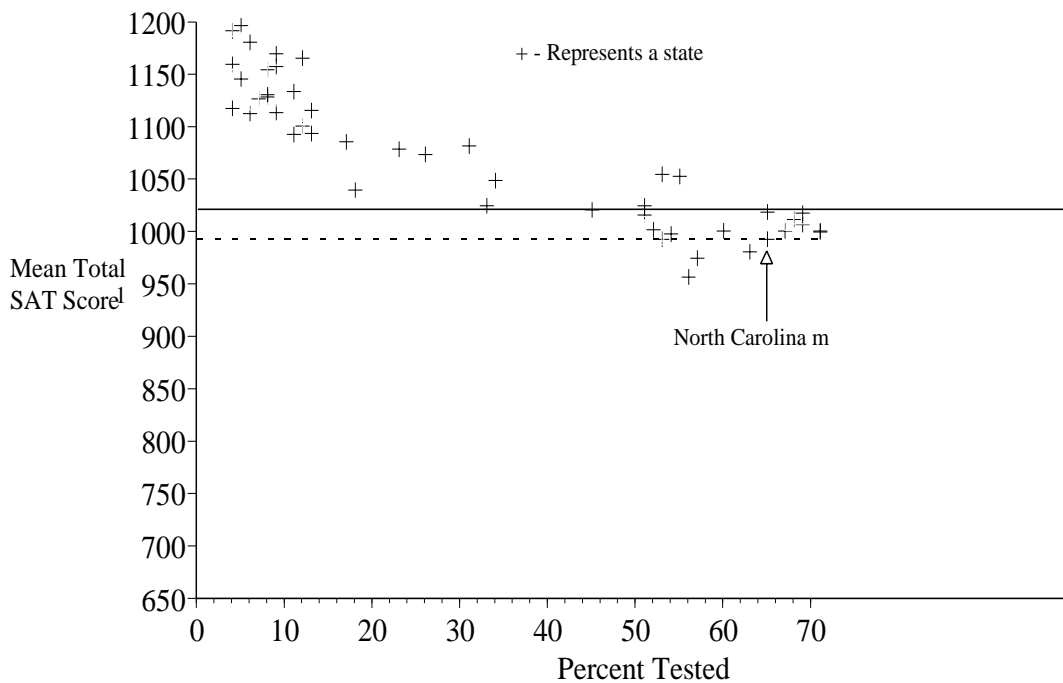


Figure 18. Mean Total SAT Scores by Percent of Students Tested for all States, 2001.

Entering Students at UNC Institutions

The mean total SAT score for North Carolina's students graduating in 2001 was 992 (four points higher than the previous year's score), while the mean total score for freshmen entering the University of North Carolina system in 2000 was 1073 (five points higher than the previous year's score). The most current year for which comparable data were available for the University of North Carolina System was 2000. Historically, mean total SAT scores for freshmen entering the University of North Carolina System each year have been higher than those for North Carolina's graduating seniors (see Table 10). This trend might suggest that many of the students in North Carolina who do not perform well on the SAT do not represent a substantial portion of the pool of students who enter the University of North Carolina System. Presumably, these students choose other post-secondary options, including community college and full-time employment.

Schools within the University of North Carolina System, however, serve a wide variety of student abilities. This variety is reflected in the mean total SAT scores of those institutions in 2000, which ranged from 822 at Elizabeth City State University to 1251 at the University of North Carolina at Chapel Hill (The University of North Carolina, 2000).

The range of total SAT scores between the 25th and 75th percentiles of North Carolina's college-bound seniors, of the nation's college-bound seniors, and of entering freshmen at the University of North Carolina system institutions and selected other institutions in 2000 is shown in Figure 19. The bands in the figure show the range in which the middle half of the students scored -- 25 percent of students scored below the lower end of the band and 25 percent scored at or above the upper end of the band.

The figure shows that each of the University of North Carolina system institutions serves some students who score like the middle 50 percent of college-bound seniors in North Carolina and the nation. Duke, Wake Forest, and Harvard are more likely to serve students who score like the top 25 percent of 2001 college-bound seniors in North Carolina and the nation. Conversely, these institutions are not as likely to serve students who score like the lower 50 percent of 2001 college-bound seniors in North Carolina. On the other hand, Howard University, recognized as one of the elite Historically Black Colleges and Universities, is unique in that it serves a diverse range of student abilities and might serve students from the upper 75 percent of 2000 college-bound seniors in North Carolina.

The member institutions of the University of North Carolina system require SAT scores from freshmen applicants, with each institution establishing its own entrance standards. Thus, the weight that SAT scores carry in the admissions process varies from institution to institution. The average total SAT scores for freshmen entering the University of North Carolina system from 1996 to 2000 are shown in Table 10. While these averages vary from year to year, relative trends in performance from institution to institution are readily discernible. Eight institutions increased performance from the previous year while eight decreased. Six of the UNC System institutions equalled or exceeded the UNC System average (1073) in 2000.

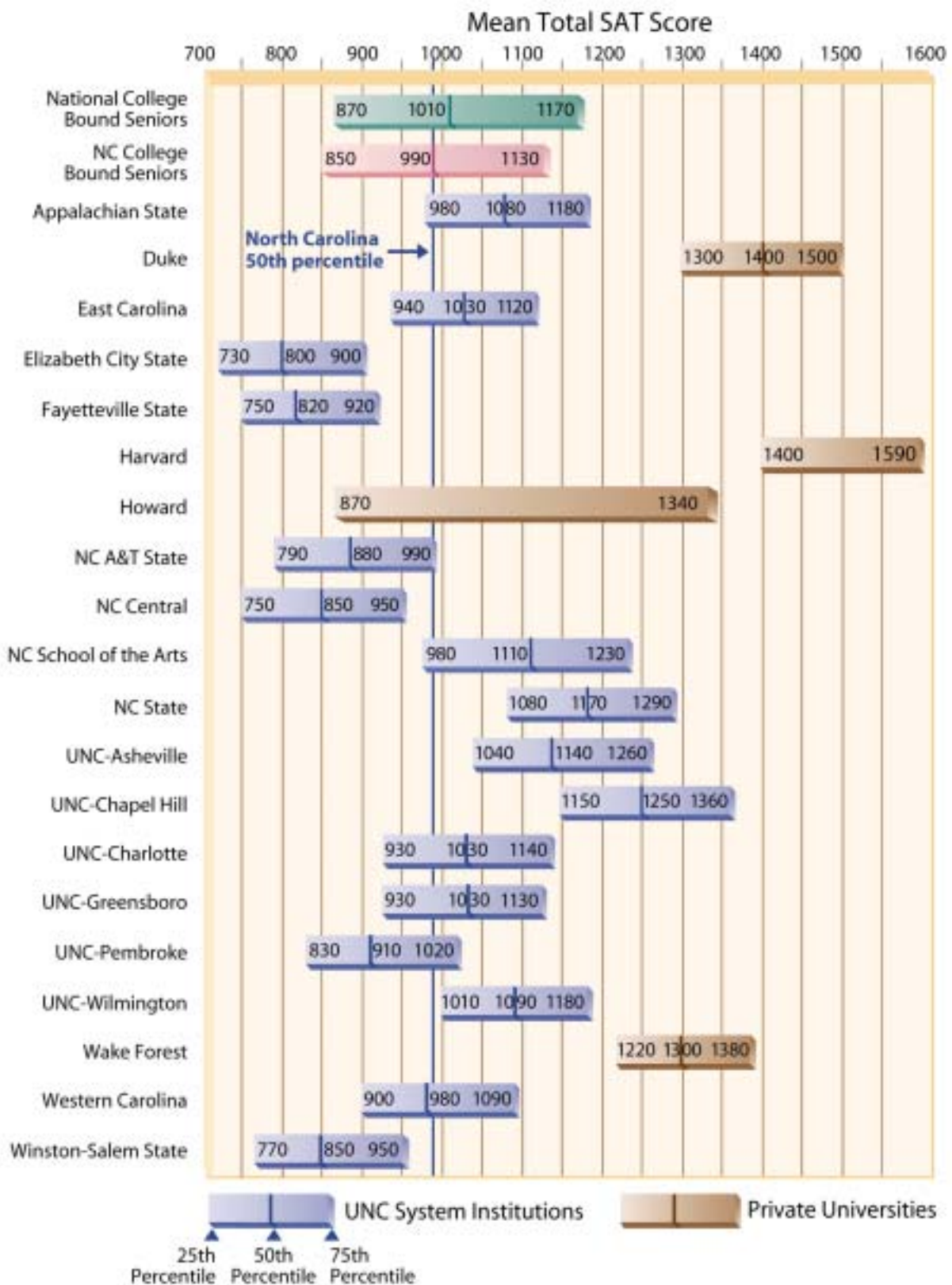


Figure 19. The 25th, 50th, and 75th Percentile of SAT Total Scores for National College-Bound Seniors, North Carolina's College-Bound Seniors, Entering Freshmen at Institutions of the University of North Carolina System, and Selected Private Universities, Fall 2000.

Historically, the UNC average total SAT score has exceeded the United States and North Carolina averages (see Table 10). In 2000, the UNC average (1073) was 85 points higher than the North Carolina average (988) and 54 points higher than the United States average (1019).

Table 10. Average Total SAT Scores of Freshmen Entering Member Institutions of the University of North Carolina System, 1996-2000

Institution	Fall 1996	Fall 1997	Fall 1998	Fall 1999	Fall 2000	Change 2000-1996	Change 2000-1999
Appalachian	1087	1076	1075	1092	1086	-1	-6
East Carolina	1015	1014	1019	1016	1035	20	19
Elizabeth City	840	825	823	823	822	-18	-1
Fayetteville State	867	833	833	867	840	-27	-27
N.C. School of the Arts	1107	1139	1136	1109	1104	-3	-5
N.C. A and T	933	928	922	911	896	-37	-15
N.C. Central	912	894	898	876	860	-52	-16
N.C. State	1148	1154	1159	1179	1185	37	6
UNC-Asheville	1141	1150	1142	1151	1155	14	4
UNC-Chapel Hill	1222	1220	1230	1245	1251	29	6
UNC-Charlotte	1023	1015	1013	1034	1043	20	9
UNC-Greensboro	1027	1028	1030	1038	1037	10	-1
UNC-Pembroke	898	914	921	932	927	29	-5
UNC-Wilmington	1055	1080	1082	1086	1097	42	11
Western Carolina	983	980	998	994	1004	21	10
Winston Salem State	851	849	845	837	869	18	32
UNC Average	1061	1060	1064	1068	1073	12	5
N.C. Average	976	978	982	986	988	12	2
U.S. Average	1013	1016	1017	1016	1019	6	3

Note: In the fall of 1991, the method of calculating the average SAT score for the University of North Carolina and its constituent institutions was changed to accommodate score data in unit record, rather than frequency distribution, format. Score averages dating back to 1981 have been revised to reflect the new method. All these scores are re-centered.

Advanced Placement (AP) Examinations

Background

The Advanced Placement Program of the College Board is a cooperative educational endeavor that was introduced four decades ago to enable students to complete college-level studies while still in high school. The premise behind the program is that college-level material can be taught successfully to able and well-prepared secondary school students. Students may use these courses for college placement and/or credit, if they make the required grade on the AP examination. More than half the nation's high schools participate in the AP Program. In addition, more than 90 percent of the nation's colleges and universities permit incoming students to receive credit and/or placement if students make the qualifying AP scores.

The Advanced Placement Program uses a grading scale of one to five for its examinations. A grade of three or higher is the benchmark used by most institutions for awarding credit or advanced placement. The AP grading scale is as follows:

- 5 = Extremely well qualified
- 4 = Well qualified
- 3 = Qualified
- 2 = Possibly qualified
- 1 = No recommendation

Research has shown a high correlation between students' performance on Advanced Placement Examinations and their success in college; consequently, the use of the AP Examination results by both schools and students has grown steadily over the years.

Participation Rate

In the 2000-01 school year, 20,980 public school students in North Carolina took 36,245 AP Examinations, 9.0 percent more students and 11.6 percent more examinations than in the previous year (see Figure 20). The 20,980 test takers in North Carolina's public schools taking 36,245 examinations is equivalent to approximately 1,728 examinations for every 1000 test takers. Nationally, 681,308 public school students took 1,139,516 examinations, 10.3 percent more students and 11.7 percent more examinations than in 2000 (see Figure 20). The ratio of AP test takers to examinations, nationally, represented approximately 1,673 examinations per 1000 test takers in 2001. Thus, North Carolina had 55 more examinations per 1000 than the nation. Between 1990 and 2001, AP candidates and examinations in North Carolina's public schools more than tripled (see Figure 20).

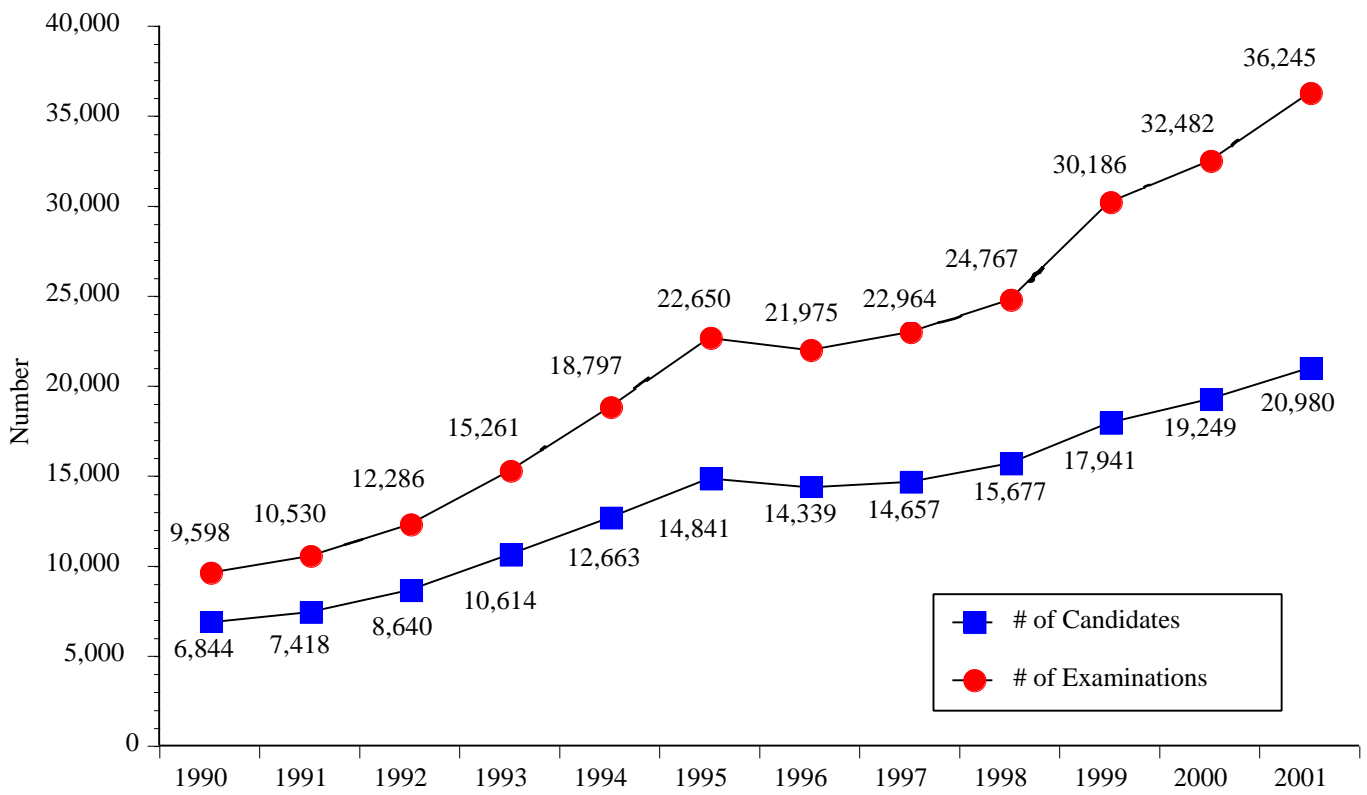


Figure 20. Number of Advanced Placement Candidates and Examinations in North Carolina's Public Schools, 1990-01.

Nationally, the number of AP candidates also tripled, while the number of examinations increased two and a half times during the same time period (see Figure 21).

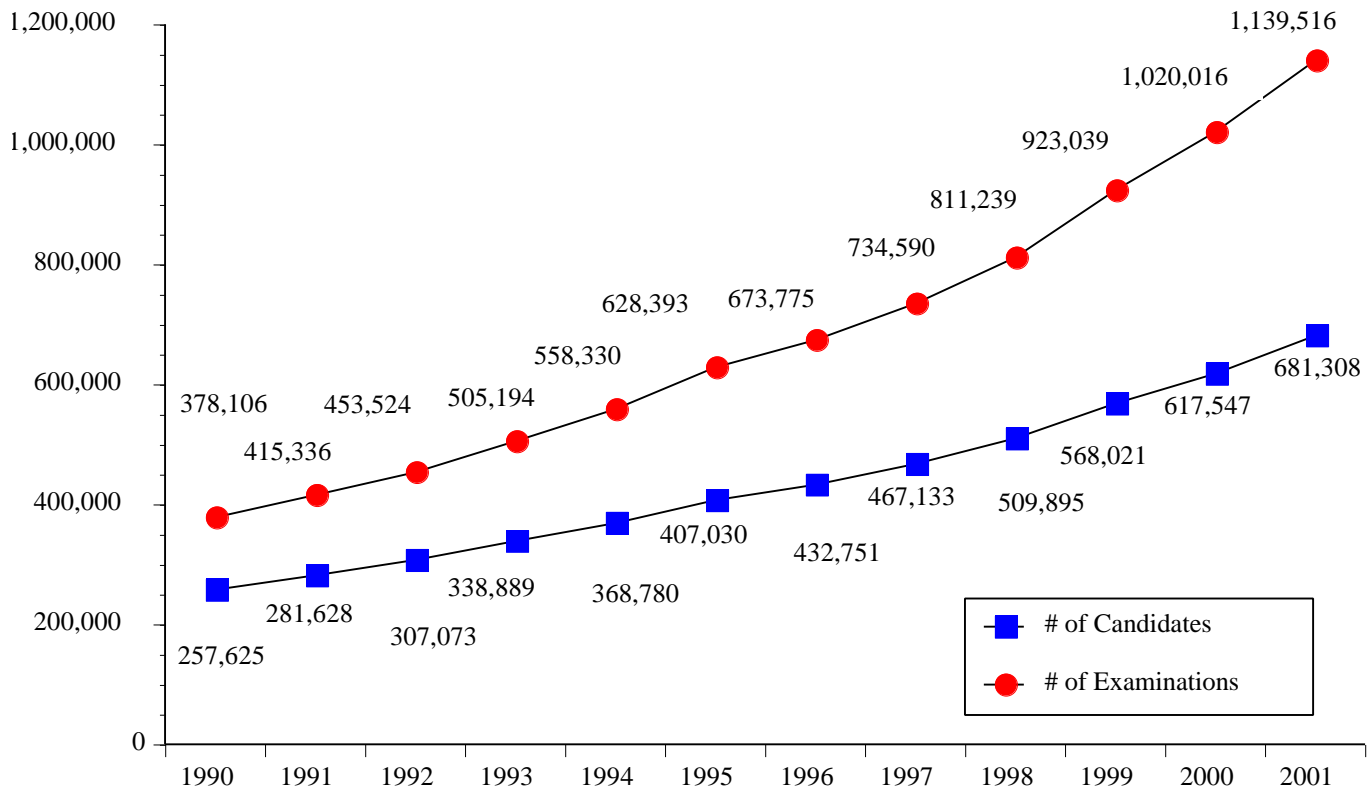


Figure 21. Number of Advanced Placement Candidates and Examinations in the Nation's Public Schools, 1990-01.

Statewide Performance

The percent of Advanced Placement (AP) examination with grades of at least 3 for public school students in North Carolina and the nation from 1990 to 2001 is shown in Figure 22. Of 36,245 examinations taken by North Carolina's students in 2001, 54.0 percent scored three or higher, slightly lower than the previous year's percentage. Nationally, 59.6 percent of the 1,139,516 examinations taken earned grades of 3.0 or higher, also slightly lower than the previous year's percentage. In 1990, the percent of AP examinations in North Carolina earning grades of 3 or higher (62.5) lagged that of the nation (65.4) by 2.9 points. In 2001, the gap widened to 5.6 points.

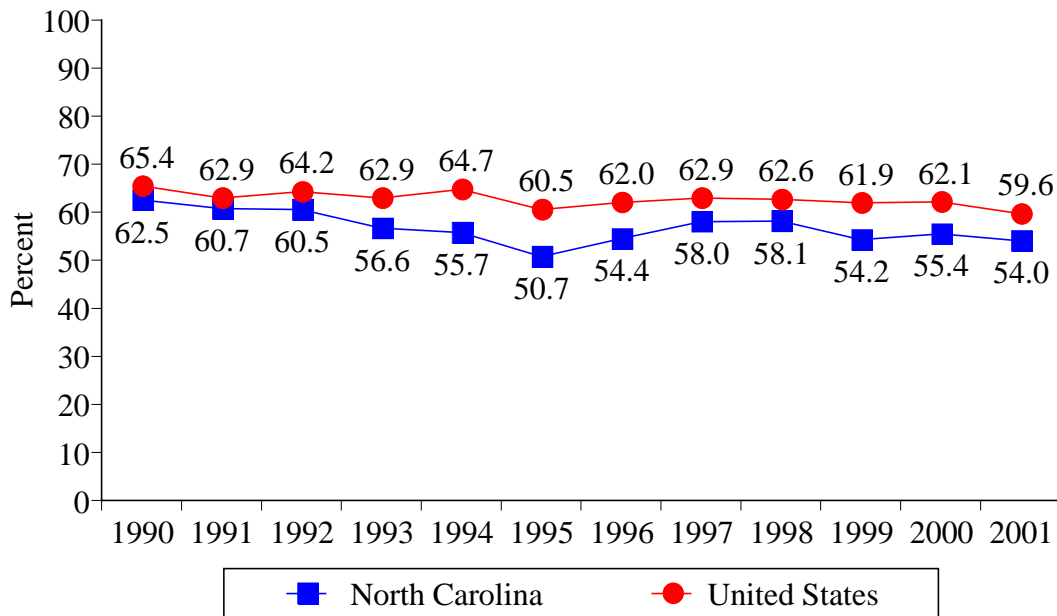


Figure 22. Percent of Advanced Placement (AP) Examinations with Grades of 3 or Above for Public School Students in North Carolina and the Nation, 1990-01.

In 2001, the College Board offered 32 different Advanced Placement Examinations. Table 11 lists these courses in descending order according to the frequency at which each course was taken. The percent of scores equalling 3 or higher is also provided. The top ten AP examinations taken most frequently in 2001 were similar to the two previous years, except Environmental Science moved up to tenth and Physics B dropped to eleventh. United States History and English Literature and Composition tend to be the more popular two of the other thirty-two offered courses from year to year. This trend continued in 2001 with U. S. History taken most frequently followed by English Literature. Of the ten most frequently taken courses, European History had the highest percent of scores equalling 3 or higher (61 percent) followed closely by Mathematics: Calculus AB (60.3 percent). Chemistry had the lowest percent of scores equalling 3 or higher (46 percent) among the ten most frequently taken courses. (Note: The distribution of scores for Environmental Science was not reported.)

Table 11. Advanced Placement Examination Courses Taken by North Carolina's Public School Students with Number of Candidates, Number of Scores Equal to Three or Higher, and Percent of Scores Equal to Three or Higher, 2000-01

Courses	Number of Candidates	# of Scores Equal to 3 or Higher	% of Scores Equal to 3 or Higher
History: United States	6367	2960	46.5
English Literature & Composition	5248	3014	57.4
English Language & Composition	4005	2223	55.6
Mathematics: Calculus AB	3875	2334	60.3
Biology	2829	1409	49.8
Psychology	2015	977	48.5
History: European	1907	1163	61.0
Statistics	1667	910	54.6
Chemistry	1426	656	46.0
Environmental Science	1402	715	-
Physics B	927	444	47.9
Government & Politics: United States	844	524	62.1
Mathematics: Calculus BC	778	580	74.6
Spanish Language	644	367	57.0
Computer Science	338	144	42.6
French Language	241	91	37.8
Art: Studio-General Portfolio	219	134	61.2
Music: Theory	194	138	71.1
Art: History of	179	87	48.6
Physics C: Mechanics	176	145	82.4
Computer Science AB	117	101	86.3
Latin: Vergil	116	39	33.6
Latin: Literature	106	48	45.3
Physics C: Electricity & Magnetism	104	69	66.3
German Language	93	44	47.4
Art: Studio-Drawing Portfolio	89	71	79.8
Spanish Literature	87	66	75.8
Government & Politics: Comparative	78	63	80.7
Economics: Microeconomics	71	13	18.3
Economics: Macroeconomics	57	14	24.6
French Literature	39	31	79.4
Human Geography	7	4	57.2

SOURCE: The College Board, North Carolina State Summary Report 2000-2001.

- The College Board did not report a value for this category.

Section 2. North Carolina's Performance and State Standards

ABCs of Public Education

Background

In recent years, North Carolina has undertaken a number of school improvement initiatives aimed at making its educational system one of the best in the nation. Primary among these groundbreaking initiatives was the *ABCs of Public Education*. The State Board of Education developed the ABCs of Public Education in response to legislation enacted by the General Assembly in June 1996.

The ABCs, which focuses on strong accountability and emphasizes high educational standards, teaching the basics, and maximum local control, was implemented statewide in elementary and middle schools (grade 3 through grade 8) for the first time in the 1996-97 school year. High schools were included for the first time in 1997-98.

Definitions of Awards and Recognition Categories

Schools that attain specified levels of growth/gain are eligible for incentive awards or other recognition (including Schools of Excellence, Schools of Distinction, 25 Most Improved K-8 Schools, or 10 Most Improved High Schools). Schools where growth/gain *and* performance fall below specified levels are designated as low-performing. The ABCs awards and recognition categories are explained below.

Schools of Excellence

A School of Excellence is a school that made expected growth/gain *and* had at least 90 percent of its students performing at or above grade level (i.e., in Achievement Levels III or IV). Each school recognized with this status received a dated banner and a certificate. In addition, each of the recognized schools receives any incentive award it earned from making expected or exemplary growth/gain.

Schools of Distinction

A School of Distinction is a school that had at least 80 percent of its students performing at or above grade level (i.e., in Achievement Levels III or IV) irrespective of growth or gain (but does not qualify as a School of Excellence). Each school recognized as a School of Distinction receives a plaque and a certificate.

25/10 Most Improved Schools in Academic Growth/Gain

The 25 Most Improved K-8 schools are those that attained the State's 25 highest values on the exemplary growth composite. The 10 Most Improved High Schools are those that attained the state's ten highest values on the exemplary growth/gain composite. Any school with a combination of grades that included grade 9 or higher was eligible for the high school recognition. These schools

are recognized at a statewide banquet. The statewide event did not occur in 2001 due to budgetary constraints. Each recognized school also receives a dated banner to hang in the school, a certificate, and financial awards.

Schools Making Exemplary Growth/Gain

These schools attained their exemplary growth/gain standard. Each of the schools received a certificate and incentive awards. Incentive awards for making exemplary growth/gain are \$1500 per person for certified staff and \$500 per person for teacher assistants.

Schools Making Expected Growth/Gain

These schools attained their expected growth/gain standard (but not their exemplary growth/gain standard). Each of the schools receives a certificate of recognition and incentive awards. Incentive awards for making expected growth/gain were \$750 per person for certified staff and \$375 per person for teacher assistants.

Schools with No Recognition

These schools did not make their expected growth/gain standards; *but* they had at least half their students' scores at or above grade level (i.e., in Achievement Levels III or IV).

Low-Performing Schools

Low-Performing Schools are those that fail to meet their expected growth/gain standard and have significantly less than 50% of their students performing at or above grade level (i.e., in Achievement Levels III or IV).

ABCs Results: K-12 Schools

Below is a summary of North Carolina's public schools receiving awards and recognition from 1996-97 (the inception of the ABCs) to 2000-01. Data for all years reflect the final decisions of the North Carolina State Board of Education. When comparing data across years, however, it is important to recognize that, due to evolution of the ABCs model each year, no two years have had identical implementation. For example, in 1996-97, the first year of implementation of the ABCs, only K-8 schools were included in the model. But in 1997-98, the second year of the ABCs, high schools were included in the model for the first time. Since K-8 schools and high schools were analyzed separately, schools whose grades spanned K-12 were included in the statistical summaries for both K-8 and high schools, resulting in duplication in these counts for that year. In 1998-99, the third year of the ABCs, analyses were conducted so that no schools were duplicated in the statistical summary. In 1999-00 and 2000-01, a similar approach was used.

Table 12 summarizes North Carolina’s ABCs results from 1996-97 to 2000-01. Some highlights of the results are as follows:

- The proportion of public schools in North Carolina making expected growth increased from one-fourth in 1999-00 to just over one-third in 2000-01.
- The proportion of public schools in North Carolina making exemplary growth decreased from nearly one-half in 1999-00 to about one-fourth in 2000-01.
- The number of schools of excellence more than doubled in 2000-01 from the previous year.
- There were 131 more Schools of Distinction in 2000-01 than in the previous year.
- There were 13 fewer Low Performing Schools in 2000-01 than in the previous year.

Additional details about the ABCs are given in *2000-01 Report Card for the ABCs of Public Education Volume I*.

Table 12. Number and Percent of Public Schools in North Carolina Receiving Awards and Recognition, 1997-2001¹

Category	1996-97 ² K-8		1997-98 ³ K-8		HS		1998-99 ⁴ K-8/HS		1999-00 K-8/HS		2000-01 K-8/HS	
	#	%	#	%	#	%	#	%	#	%	#	%
Schools of Excellence	12	0.7	24	1.4	0	0.0	50	2.5	73	3.5	171	7.9
Schools of Distinction	158	9.7	289	16.8	1	0.2	408	20.6	509	24.1	640	29.7
Schools Making Exemplary Growth	531	32.5	1137	66	265	63.2	1156	58.2	956	45.2	521	24.1
Schools Making Expected Growth	395	24.2	308	17.9	83	19.8	456	23	520	24.6	769	35.6
Schools Receiving No Recognition ⁵	583	35.7	261	15.2	50	11.9	358	18	595	28.1	834	38.6
Low-Performing Schools Made Expected or Exemplary Growth	123	7.5	15	0.9	15	3.6	13	0.7	44	2.1	31	1.4
Total ABCs Schools⁶	1632		1722		419		1985		2115		2158	

¹ABCs results for 1996-97, 1997-98, 1998-99, 1999-00, and 2000-01 reflect State Board of Education actions through October 2, 1997, October 1, 1998, October 7, 1999, October 5, 2000, and November 1, 2001, respectively.

²The first year of implementation of the ABCs was in 1996-97; only K-8 schools were included in the model.

³The ABCs high school model was first implemented in 1997-98. (Schools whose grades spanned K-12 were included in statistical summaries for both K-8 and high schools, so there is duplication in these counts.)

⁴The comprehensive ABCs model has been applied since 1998-99; there is no duplication in these counts.

⁵This category was *No Recognition* in 1996-97, *Adequate Performance* in 1997-98, and *No Recognition* in 1998-99, 1999-00, and 2000-01.

⁶Total ABCs Schools is the total number of schools participating in the ABCs for a given year; this total does not reflect the sum of the column; Schools of Excellence and Schools of Distinction are not exclusive categories and may include schools that appear in other categories.

Caution: Comparisons across years should be made with the above footnotes in mind.

Student Achievement Levels

Background

End-of-Grade (EOG) tests are curriculum-based multiple-choice standardized achievement tests mandated by the North Carolina General Assembly. These tests assess the attainment of the curricular competencies described in the North Carolina *Standard Course of Study*. The competencies emphasize the application of knowledge and skills and are closely aligned with national curriculum standards. EOG results may be reported as scale scores or achievement levels.

Achievement levels are particularly useful for describing End-of-Grade performance because they permit the comparison of student and group performance to preset standards. These standards are based on what is expected in each subject at each grade level. Achievement levels were determined by relating judgments of thousands of North Carolina teachers regarding the performance of each of their students to each student's performance on the end-of-grade multiple-choice tests. The four achievement levels used by the statewide testing program are listed in Table 13.

Table 13. Description of Four Achievement Levels used in North Carolina's End-of-Grade (EOG) Testing

Level I	Students performing at this Level do not have sufficient mastery of knowledge and skills in the subject area to be successful in the next grade.
Level II	Students performing at this level demonstrate inconsistent mastery of knowledge and skills in the subject area and are minimally prepared to be successful at the next grade level.
Level III	Students performing at this level consistently demonstrate mastery of the grade level subject matter and skills and are well prepared for the next grade level.
Level IV	Students performing at this level consistently perform in a superior manner clearly beyond that required to be proficient at grade level work.

Reading Achievement Levels

Table 14 shows the percent of students moving from one reading achievement level to the next in subsequent years. Column one shows the reading achievement levels, column two the number of students in the reading achievement levels in 2000, and columns 3-6 the percent of students remaining at the 2000 levels, or moving to higher or lower levels in 2001. For example, of the 30,069 students in Reading Achievement Level I in 2000, 34.9 percent remained at that level in 2001, and 65.2 percent progressed to higher achievement levels in 2001 (49.7 percent scoring in Level II, 14.4 percent scoring in Level III and 1.1 percent in Level IV).

Students who started out in higher achievement levels tended to continue high performance the next year. For example, of the students in Reading Levels III and IV in 2000, 62.4 percent and 79.2 percent, respectively, remained at those levels in 2001. Among students who began in Reading Levels I and II, some students improved the subsequent year, but many continued to perform in the lowest achievement levels. For example, of the students scoring in Levels I and II in 2000, 34.9 percent and 47.1 percent, respectively, remained at the same level in 2001.

Table 14. Transition between End-of-Grade (EOG) Reading Achievement Levels for Grade 3 through Grade 8 Matched Cohorts in North Carolina, 2000-01

	N at Level 2000	% Level I 2001	% Level II 2001	% Level III 2001	% Level IV 2001
Level I	30,069	34.9	49.7	14.4	1.1
Level II	107,600	10.0	47.1	40.1	2.9
Level III	225,744	1.0	13.8	62.4	22.8
Level IV	189,156	0.0	0.7	20.1	79.2

Mathematics Achievement Levels

Table 15 shows the percent of students progressing from one mathematics achievement level to the next in subsequent years. Column one shows the mathematics achievement levels, column two the number of students in the mathematics achievement levels in 2000, and columns 3-6 the percent of students remaining at the 2000 levels, or moving to higher or lower levels, in 2001. For example, of the 15,644 students in Mathematics Achievement Level I in 2000, 28.3 percent remained at that level in 2001 and 71.7 percent progressed to higher levels in 2001 (54.6 percent scoring in Level II, 16.4 percent in Level III and 0.7 percent in Level IV).

Table 15. Transition between End-of-Grade (EOG) Mathematics Achievement Levels for Grade 3 through Grade 8 Matched Cohorts in North Carolina, 2000-01

	N at Level 2000	% Level I 2001	% Level II 2001	% Level III 2001	% Level IV 2001
Level I	15,644	28.3	54.6	16.4	0.7
Level II	85,948	10.2	45.5	42.1	2.3
Level III	221,765	1.1	14.2	64.0	20.7
Level IV	231,965	0.0	0.5	17.2	82.3

The performance pattern in mathematics achievement was similar to that for reading, with students who started out in higher achievement levels continuing high performance and many of those who started at the lower achievement levels continuing low performance. For example, of the total

students in Mathematics Achievement Levels III and IV in 2000, 64.0 percent and 82.3 percent, respectively, remained at those levels in 2001. However, of the students who started at Mathematics Achievement Levels I and II, 28.3 percent and 45.5 percent, respectively, scored at the same level the following year.

Changes in Student Achievement Levels

A goal of the ABCs of Public Education is to move as many students as possible to the highest levels of achievement in reading and mathematics. While progress has been made in both reading and mathematics in this regard, still more of the state's students at the lower achievement levels need to move to higher levels. Another focus of the ABCs accountability program is that students reaching the highest levels of achievement maintain these levels. These trends are monitored closely to ensure that proper instructional focus is given to students moving to higher achievement levels and to maintain these levels of performance.

From 1996-97 to 2000-01, increasing percentages of students moved to higher achievement levels in reading and mathematics, while the percentages remaining at or falling to lower levels decreased (see Tables 16 and 17). For example, Table 16 shows that more students in Level I (15.7 percent) and more students in Level II (10.7 percent) and more students at Level III (0.9 percent) progressed to higher achievement levels in reading in 2000-01 than in 1996-97.

Table 16. Percent of Students in Grades 3-8 Remaining at Level, Dropping to Lower Levels, or Progressing to Higher Achievement Levels on Reading End-of-Grade (EOG) Tests, 1997-2001

Start of Year	End of Year				Change
		1996-97	1999-00	2000-01	from 1996-97
Level I	Above Level I	56.0	61.1	71.7	15.7
	At Level I	44.0	38.9	28.3	-15.7
Level II	Above Level II	33.7	38.2	44.4	10.7
	At Level II	52.2	49.2	45.5	-6.7
	Below Level II	14.1	12.6	10.2	-3.9
Level III	Above Level III	19.8	22.1	20.7	0.9
	At Level III	64.8	62.2	64.0	-0.8
	Below Level III	15.4	15.6	15.3	-0.1
Level IV	At Level IV	78.6	79.0	82.3	3.7
	Below Level IV	21.4	21.0	17.7	-3.7

Transitions in student achievement levels in mathematics in 2000-01 were similar to those in reading (see Table 17). More students in Level I (5.5 percent) and more students in Level II (4.1 percent) progressed to higher achievement levels in mathematics in 2000-01 than in 1996-97. However, fewer students at Level III progressed to a higher achievement level in 2000-01 than in 1996-97. These percentages might be associated with increased instructional focus in these subjects since the inception of the ABCs.

Table 17. Percent of Students in Grades 3-8 Remaining at Level, Dropping to Lower Levels, or Progressing to Higher Achievement Levels on Mathematics End-of-Grade (EOG) Tests, 1997-2001

Start of Year	End of Year	1996-97	1999-00	2000-01	Change from 1996-97
Level I	Above Level I	59.6	65.0	65.1	5.5
	At Level I	40.3	35.0	34.9	-5.4
Level II	Above Level II	36.2	42.5	40.5	4.1
	At Level II	48.9	44.9	48.5	-0.4
	Below Level II	14.7	12.6	11.0	-3.7
Level III	Above Level III	20.7	22.2	16.3	-4.4
	At Level III	62.7	61.2	65.3	2.6
	Below Level III	16.6	16.6	18.4	1.8
Level IV	At Level IV	82.3	83.1	68.3	-14.0
	Below Level IV	17.7	16.9	31.7	14.0

Section 3. Good News about North Carolina's Public Schools

Public Schools in North Carolina have demonstrated continued improvement each year since the inception of the ABCs of Public Education in 1996-97. This improvement has been evident on both state and national assessments. The attention and recognition the state has garnered throughout the nation attest to the state of public education in North Carolina. Some of the recognition the state has received is chronicled below.

- The National Education Goals Panel ranked North Carolina among the five states making the most improvement on grades four and five 2000 NAEP mathematics assessments.
- The inaugural First in America 2000 Progress Report reported that North Carolina is well on its way to having the best schools in America by 2010.
- North Carolina was one of two states to reduce the gap between White student and minority student grade 4 NAEP mathematics scores.
- The National Association of State Boards of Education recognized North Carolina's statewide student accountability program as a "State Improvement Initiative."
- North Carolina and New York were cited by the July 31, 2001 USA Today as two "education success stories that should encourage school districts to stay the course."
- Over half (59 percent) of North Carolinians surveyed said their schools deserve either an "A" or "B" grade according to the UNC School of Journalism Carolina Poll (Fall 2001).
- The 2001 Phi Delta Kappa/Gallup Poll found that 68 percent of parents assign the school their oldest child attends an "A" or a "B".
- The National Education Goals Panel in its April 2001 report stated that North Carolina was the only state to reduce the gap between its highest and lowest performing students on NAEP reading and mathematics assessments during the 1990s.
- The National Association for the Advancement of Colored People (NAACP) presented the 2001 Daisy Bates Educational Advocacy Award to the North Carolina Department of Public Instruction for its efforts to close the achievement gap.
- North Carolina accounts for almost a quarter of the nation's National Board Certified Teachers -- 3,660. Florida had the next highest number with 2,256.
- North Carolina received the highest score of any state for Improving Teacher Quality, according to Education Week's fifth annual 50-state report card on public education released in January 2001.
- On the 2001 SAT, North Carolina had the largest gain (40 points) of any state that tests more than 12 percent of students.

- In 2001, the fifth year of the ABCs of Public Education, 59.7 percent of North Carolina's schools met either expected or exemplary growth standards.
- The number of AP examinations per 1000 test takers in North Carolina (1,728) was 55 examinations higher than that of the nation (1,673) in 2001.
- North Carolina was one of 24 states selected by the US Department of Education to receive a Teacher Quality Enhancement Grant, part of which was used to implement NC TEACH (Teachers of Excellence for All Children). NC TEACH is a comprehensive program designed to recruit, train, support and retain highly skilled mid-career professionals with at least an undergraduate degree, who seek to enter the teaching profession. The program is administered by the UNC General Administration in collaboration with NC DPI.

Updates on good news about public schools in North Carolina may be found at the following website: <http://www.ncpublicschools.org/news/gnews.html/>.

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