DOCUMENT RESUME

ED 482 944 SE 068 337

TITLE	The Nation's Report Card: Mathematics Highlights, 2003.
INSTITUTION	National Center for Education Statistics (ED), Washington, DC.
PUB DATE	2003-00-00
NOTE	37p.
AVAILABLE FROM	ED Pubs, P.O. Box 1398, Jessup, MD 20794. Tel: 877-4-ED-PUBS (Toll Free); Fax: 301-470-1244; Web site: http://www.ed.gov/pubs.edpubs.html; e-mail: edpubs@inet.ed.gov.
PUB TYPE	Reports - Research (143)
EDRS PRICE	EDRS Price MF01/PC02 Plus Postage.
DESCRIPTORS	Achievement; *Mathematics; Scores

ABSTRACT

This issue of The Nation's Report Card highlights mathematics in 2003. It includes sections on Average Scale Scores, Students Reaching NAEP Achievement Levels, Percentile Results, 2003 Assessment Design, State Results, Subgroup Results, Sample Mathematics Questions, Technical Notes, Additional Data Tables, and NAEP on the Web. (AMT)

NCES
National Center for Education Statistics

National Assessment of Educational Progress

The Nation's Report Card

Mathematics Highlights 2003

Important Indicator of Educational Progress

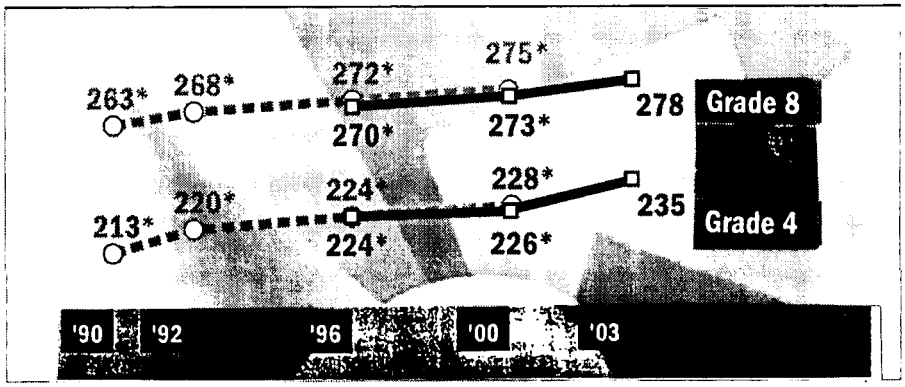
Since 1969 the National Assessment of Educational Progress (NAEP) has been an ongoing nationally representative indicator of what American students know and can do in maior academic subjects.

Over the years, NAEP has measured students' achievement in many subjects, including reading, mathematics, science, writing, U.S. history, geography, civics, and the arts. In 2003, NAEP conducted a national and statc assessment in mathematics at grades 4 and 8.

NAEP is a project of the National Center for Education Statistics (NCES) within the Institute of Education Sciences of the U.S. Department of Education, and is overseen by the National Assessment Governing Board (NAGB).

Fourth- and Eighth-Graders' Average Mathematics Scores Increase

Average scores were higher in 2003 than in all the previous assessment years at both grades 4 and 8. (Differences are discussed in the report only if they were found to be statistically significant.)



*Significantly different from 2003.

NOTE: Average mathematics scores are reported on a 0-500 scale. In addition to allowing lor accommodations, the accommodations-perminedresults (1996-2003) differ slightly from previous years' results, and from previously reported results for 1996 and 2000. due to changes in sample weightingprocedures. Significance tests were performed using unrounded nuhbers.

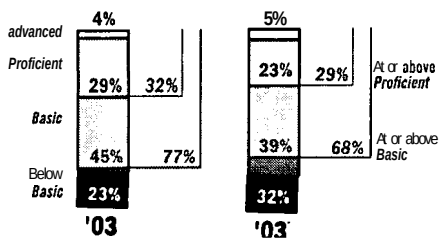
SOURCE: U.S. Department of Educauon, Institute of Education Sciences. National Center lor Educabon Statistics, National Assessmentof Educational Progress (NAEP). 1990. 1992. 1996,2000, and 2003 Mathematics Assessments.

How well did students perform in 2003?

The figures to the right show that 32 percent of fourth-graders and 29 percent of eighth-graders performed at or above the Proficient level in 2003. The percentages of students performing at or above Basic in 2003 were 77 percent at grade 4 and 68 percent at grade 8.

NOTE: Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, Institute of Education Sciences. National Center for Educatuon Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics A t



Background Information

Average test scores have a standard error—a range of up to a few points above or below the score-due to sampling error and measurement error. Statistical tests are used to determine whether the differences between average scores are significant; therefore, not all apparent differences may be found to be statistically significant. All the differences discussed in this report were tested for statistical significance at the .05 level.

Beginning in 2002, the NAEP national sample was obtained by aggregating the samples from each state, rather than by obtaining an independently selected national sample. As a consequence, the size of the national sample increased, and smaller differences between years or bctween types of students were found to be statistically significant than would have been detected in previous assessments. In keeping with past practice, all statistically significant differences are indicated in the current report.

The results presented in the figures and tables throughout this report distinguish between nvo different reporting samples that reflect a change in administration procedures beginning in 1996. This change involved permitting students with disabilities or limited-English-proficient students to use certain accommodations (e.g, extended time, small group testing). Comparisons between results from 2003 and those from assessment years in which both types of administration procedures were used (1996 and 2000) are discussed based on the results when accommodadons were permitted, although significant differences in results when accommodations were not permitted may bc noted in the figures and tables.

Achievement Levels Provide Standards for Student Performance

Achievement levels are performance standards set by NAGB to provide a context for interpreting student performance on NAEP. These performance standards, based on recommendations from broadly representative panels of educators and members of the public, are used to report what students should know and be able to do at the ***Basic, Proficient,*** and ***Advanced*** levels of performance in each subject area and at each grade assessed.

Detailed descriptions of the NAEP mathematics achievement levels can be found on the NAGB web site (http://www.nagb.org/pubs/pubs.html).

The minimum scale scores for achievement levels are as follows:

	Grade 4	Grade 8
Basic	214	262
Proficient	249	299
Advanced	282	333

As provided by law, NCES, upon review of a congressionally mandated evaluation of NAEP, has determined that achievement levels are to be used on a trial basis and should be interpreted and used with caution.

However, both NCES and NAGB believe that these performance standards are useful for understanding trends in student achievement. NAEP achievement levels have been widely used by national and state officials.

Gain Overall Since 1990 in Achievement-Level Performance

As shown in the table and figure below, the percentages of fourth- and eighth-graders at or above ***Basic,*** at or above ***Proficient,*** and at ***Advanced*** were all higher in **2003** than in **1990.** There were also recent increases from **2000** to **2003** in the percentages of fourth-graders at or above ***Basic*** and ***Proficient*** and at ***Advanced,*** and in the percentages of eighth-graders at or above ***Basic*** and ***Proficient.***

Percentages of students, by mathematics achievement level, grades 4 and 8: 1990–2003

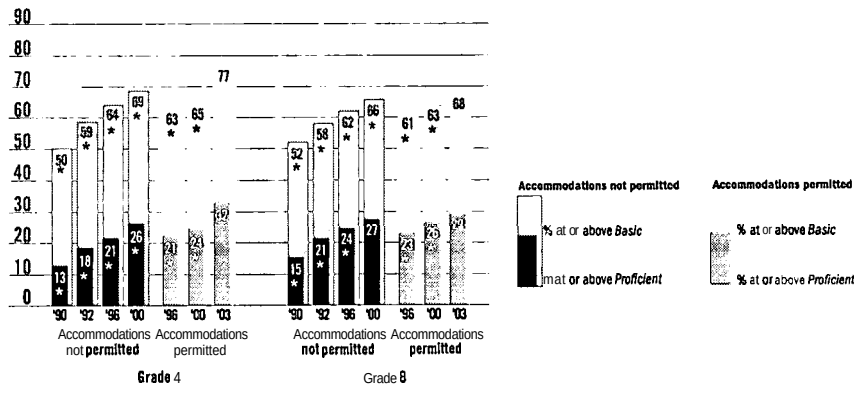
		Below Basic	At or above Basic	At or above *Proficient*	At Advanced
Grade 4					
Accommodations not permitted	1990	50 *	50 *	13 *	1 *
	1992	41 *	59 *	18 *	2
	1996	36 *	64 *	21 *	2 *
	2000	31 *	69 *	26 *	3 *
Accommodations permitted	1996	37 *	63 *	21 *	2 *
	2000	35 *	65 *	24 *	3 *
	2003	23	77	32	4
Grade 8					
Accommodations not permitted	1990	48 *	52 *	15 *	2 *
	1992	42 *	58 *	21 *	3 *
	1996	38 *	62 *	24 *	4 *
	2000	34 *	66 *	27	5
Accommodations permitted	1996	39 *	61 *	23 *	4 *
	2000	37 *	63 *	26 *	5
	2003	32	68	29	5

*Significantly different from 2003

NOTE: Detail may not sum to totals because of rounding. In addition to allowing for accommodations, the accommodations permitted results (1996-2003) differ slightly fmm previous years' results and from previously reported results for 1996 and 2000, due to changes in sample weighting procedures Significance tests were performed using unmunded numbers.

SOURCE: US Department of Education, Institute of Education Sciences. National Center for Education Statistics, National Assessment of Educational P m e s (NAEP). 1990,1992,1996,2000, and 2003 Mathematics Assessments.

Percentages of students at or above *Basic* and Proficient In mathematics, grades 4 and 8: 1990–2003



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SOURCE: U S Department of Education, Institute of Education Sciences, Nauonal Center lor Education Statistics, National Assessment of Educational Progress (NAEP), 1990,1992.1996.2000. and 2003 Mathematics Assessments

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.

Improvement Seen Among Lower-, Middle-, and Higher-Performing Students

Looking at changes in scores for students at lower-, middle-, and higher-performance levels gives a more complete picture of student progress. An examination of scores at different percentiles on the 0–500 mathematics scale at each grade indicates whether or not the changes seen in the national average score results are reflected in the performance of lower-, middle-, and higher-performing students.

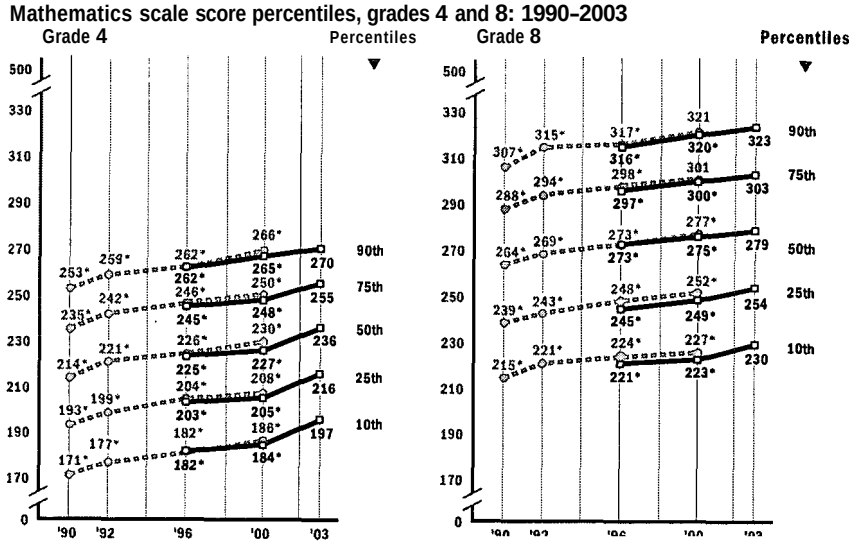
The percentile indicates the percentage of students whose scores fell below a particular score. For example, 25 percent of assessed students' scores fell below the 25th percentile score and 75 percent fell below the 75th percentile score.

At both grades 4 and 8, scores at the 10th, 25th, 50th, 75th, and 90th percentiles were higher in 2003 than in any of the previous assessment years.

At grade 4, gains detected between 2000 and 2003 ranged from approximately 5 scale score points for students performing at the 90th percentile to 13 points for students at the 10th percentile.

At grade 8, increases since 2000 ranged from approximately 3 scale score points at the 90th percentile to 7 points at the 10th percentile.

Mathematics scale score percentiles, grades 4 and 8: 1990–2003



*Significantly different from 2003

NME: In addition to allowing for accommodations the accommodations-permitted results (1996-2003) differ slightly from previous years' results, and from previously reported results for 1996 and 2000, due to changes in sample weighting procedures. Significance tests were performed using unrounded numbers.

SOURCE: U.S. Department of Education. Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, 2000, and 2003 Mathematics Assessments.

NAEP 2003 Mathematics Assessment Design

Assessment Framework

The NAEP mathematics framework, which defines the content for the 1990–2003 assessments, was developed through a comprehensive national consultative process and adopted by NAGB.

The mathematics framework calls for the assessment to include questions based on five mathematics content areas: 1) number sense, properties, and operations; 2) measurement; 3) geometry and spatial sense; 4) data analysis, statistics, and probability; and 5) algebra and functions.

In addition, the framework specifies that each question measure one of three mathematical abilities. The three mathematical abilities specified by the framework are 1) conceptual understanding, 2) procedural knowledge, and 3) problem solving.

The sample questions on pages 16–19 illustrate how the assessment was developed to measure the content areas and mathematical abilities. Each student answered approximately 45 questions in 50 minutes.

The complete framework is available on the NAGB web site (http://www.nagb.org/pubs/pubs.html).

Student Samples

Results from the 2003 mathematics assessment are reported for the nation and states at grades 4 and 8. The national results are based on a representative sample of students in both public schools and nonpublic schools, while the state results are based only on public-school students.

Rccommodations

It is NAEP's intent to assess all selected students from the target population. Before 1996, no testing accommodations were provided to students with disabilities and limited-English-proficient students who participated in the NAEP mathematics assessments. In 1996 (national only) and 2000 (national and state), NAEP was administered to two reporting samples—"accommodations not permitted" and "accommodations permitted." Beginning in 2003, the NAEP mathematics assessment has adopted the new "accommodations-permitted" procedure as its only administration procedure, and thus again had only one reporting sample as in mathematics assessment years prior to 1996.

Because the representativeness of samples is ultimately a validity issue, NCES has commissioned studies of the impact of assessment accommodations on overall scores. One paper that explores the impact of two possible scenarios on NAEP is available on the NAEP web site (http://www.nces.ed.gov/nationsreportcard/pdf/main2002/statmeth.pdf).

Most Participating States and Jurisdictions Show Gains at Grades 4 and 8

In addition to national results, the 2003 mathematics assessment collected performance data for fourth- and eighth-graders who attended public schools in 50 states and 3 other jurisdictions that participated.

State Average Score Results

Tables 1 and 2 present average mathematics score results for fourth- and eighth-graders respectively.

Among the 43 states and jurisdictions that participated in both the 2000 and 2003 fourth-grade assessments, all showed increases in average scores. Similarly, all 42 of the states and jurisdictions that participated in the 1992 and 2003 assessments showed increases in average scores.

Table 1. Average mathematics scale scores, grade 4 public schools: By state, 1992–2003

	Accommodations not permitted			Accommodations permitted	
	1992	1996	2000	2000	2003
Nation (public) [1]	219 *	222 *	226 *	224 *	234
Alabama	208 *,**	212 *,**	218 *,**	217 *,**	223
Alaska	–	224 *,**	–	–	233
Arizona	215 *,**	218 *,**	219 *,**	219 *,**	229
Arkansas	210 *,**	216 *,**	217 *,**	216 *,**	229
California	208 *,**	209 *,**	214 *,**	213 *,**	227
Colorado	221 *,**	226 *,**	–	–	235
Connecticut	227 *,**	232 *,**	234 *,**	234 *,**	241
Delaware	218 *,**	215 *,**	–	–	236
florida	214 *,**	216 *,**	–	–	234
Georgia	216 *,**	215 *,**	220 *,**	219 *,**	230
Hawaii	214 *,**	215 *,**	216 *,**	216 *,**	227
Idaho	222 *,**	–	227 *,**	224 *,**	235
Illinois	–	–	225 *,**	223 *,**	233
Indiana	221 *,**	229 *,**	234 *,**	233 *,**	238
Iowa	230 *,**	229 *,**	233 *,**	231 *,**	238
Kansas	–	–	232 *,**	232 *,**	242
Kentucky	215 *,**	220 *,**	221 *,**	219 *,**	229
Louisiana	204 *,**	209 *,**	218 *,**	218 *,**	226
Maine	232 *,**	232 *,**	231 *,**	230 *,**	238
Maryland	217 *,**	221 *,**	222 *,**	222 *,**	233
Massachusetts	227 *,**	229 *,**	235 *,**	233 *,**	242
Michigan	220 *,**	226 *,**	231 *,**	229 *,**	236
Minnesota	228 *,**	232 *,**	235 *,**	234 *,**	242
Mississippi	202 *,**	208 *,**	211 *,**	211 *,**	223
Missouri	222 *,**	225 *,**	229 *,**	228 *,**	235
Montana	–	228 *,**	230 *,**	228 *,**	236
Nebraska	225 *,**	228 *,**	226 *,**	225 *,**	236
Nevada	–	218 *,**	220 *,**	220 *,**	228
New Hampshire	230 *,**	–	–	–	243
New Jersey	227 *,**	227 *,**	–	–	239
New Mexico	213 *,**	214 *,**	214 *,**	213 *,**	223
New York	218 *,**	223 *,**	227 *,**	225 *,**	236
North Carolina	213 *,**	224 *,**	232 *,**	230 *,**	242
North Dakota	229 *,**	231 *,**	231 *,**	230 *,**	238
Ohio	219 *,**	–	231 *,**	230 *,**	238
Oklahoma	220 *,**	–	225 *,**	224 *,**	229
Oregon	–	223 *,**	227 *,**	224 *,**	236
Pennsylvania	224 *,**	226 *,**	–	–	236
Rhode Island	215 *,**	220 *,**	225 *,**	224 *,**	230
South Carolina	212 *,**	213 *,**	220 *,**	220 *,**	236
South Dakota	–	–	–	–	237
Tennessee	211 *,**	219 *,**	220 *,**	220 *,**	228
Texas	218 *,**	229 *,**	233 *,**	231 *,**	237
Utah	224 *,**	227 *,**	227 *,**	227 *,**	235
Vermont	–	225 *,**	232 *,**	232 *,**	242
Virginia	221 *,**	223 *,**	230 *,**	230 *,**	239
Washington	–	225 *,**	–	–	238
West Virginia	215 *,**	223 *,**	225 *,**	223 *,**	231
Wisconsin	229 *,**	231 *,**	–	–	237
Wyoming	225 *,**	223 *,**	229 *,**	229 *,**	241
Other jurisdictions					
District of Columbia	193 *,**	187 *,**	193 *,**	192 *,**	205
DDESS [2]	–	224 *,**	228 *,**	228 *,**	237
DoDDS [3]	–	223 *,**	228 *,**	226 *,**	237

– Not available

* Significantly different fmm 2003 when only one jurisdiction or the nation is being examined.

** Significantly different from 2003 when using a multiple-comparison procedure based on all jurisdictions that participated in both years.

[1] National results for assessments prior to 2003 are based on the national sample, not on aggregated state samples.

[2] Department of Defense Domestic Dependent Elementary and Secondary Schools.

[3] Department of Defense Dependents Schools (Overseas).

NOTE: State-level data were not collected in 1990. Comparative performance results may be affected by changes in exclusion rates for students with disabilities and limited-English-proficient students in the NAEP samples. In addition to allowing for accommodations, the accommodations-permitted results for national public schools (2000 and 2003) differ slightly fmm previous years' results, and fmm previously reported results for 2000, due to changes in sample weighting pmcedures. Significance tests were performed using unrounded numbers.

SOURCE: U.S. Department of Education. Institute of Education Sciences. National Center for Education Statistics. National ment Educational Progress (NAEP). 1996, and 2003 Mathematics Assessments.

At grade 8, of the 42 states and jurisdictions that participated in both the 2000 and 2003 assessments, 28 had higher average scores in 2003 and none showed a decline. All 38 states and jurisdictions that participated in both 1990 and 2003 had higher average scores in 2003.

Table 2. Average mathematics scale scores, grade 8 public schools: By state, 1990–2003

	Accommodations not permitted				Accommodations permitted	
	1990	1992	1996	2000	2000	2003
Nation (public) [1]	262 *	267 *	271 *	274	272 *	276
Alabama	253 *,**	252 *,**	257 *	262	264	262
Alaska	–	–	278	–	–	279
Arizona	260 *,**	265 *,**	268	271	269	271
Arkansas	256 *,**	256 *,**	262 *	261 *	257 *,**	266
California	256 *,**	261 *,**	263	262 *	260 *,**	267
Colorado	267 *,**	272 *,**	276 *,**	–	–	283
Connecticut	270 *,**	274 *,**	280 *,**	282	281	284
Delaware	261 *,**	263 *,**	267 *,**	–	–	277
Florida	255 *,**	260 *,**	264 *,**	–	–	271
Georgia	259 *,**	259 *,**	262 *,**	266	265 *,**	270
Hawaii	251 *,**	257 *,**	262 *,**	263	262 *	266
Idaho	271 *,**	275 *,**	–	278	277 *	280
Illinois	261 *,**	–	–	277	275	277
Indiana	267 *,**	270 *,**	276 *,**	283	281	281
Iowa	278 *,**	283	284	–	–	284
Kansas	–	–	–	284	283	284
Kentucky	257 *,**	262 *,**	267 *,**	272	270 *,**	274
Louisiana	246 *,**	250 *,**	252 *,**	259 *,**	259 *,**	266
Maine	–	279 *,**	284	284	281	282
Maryland	261 *,**	265 *,**	270 *,**	276	272 *,**	278
Massachusetts	–	273 *,**	278 *,**	283 *	279 *,**	287
Michigan	264 *,**	267 *,**	277	278	277	276
Minnesota	275 *,**	282 *,**	284 *,**	288	287 *	291
Mississippi	–	246 *,**	250 *,**	254 *,**	254 *,**	261
Missouri	–	271 *,**	273 *,**	274 *,**	271 *,**	279
Montana	280 *,**	–	283	287	285	286
Nebraska	276 *,**	278 *,**	283	281	280	282
Nevada	–	–	–	268	265 *,**	268
New Hampshire	273 *,**	278 *,**	–	–	–	286
New Jersey	270 *,**	272 *,**	–	–	–	281
New Mexico	256 *,**	260 *,**	262	260	259 *,**	263
New York	261 *,**	266 *,**	270 *,**	276	271 *,**	280
North Carolina	250 *,**	258 *,**	268 *,**	280	276 *,**	281
North Dakota	281 *,**	283 *,**	284 *,**	283 *,**	282 *,**	287
Ohio	264 *,**	268 *,**	–	283	281	282
Oklahoma	263 *,**	268 *,**	–	272	270	272
Oregon	271 *,**	–	276 *,**	281	280	281
Pennsylvania	266 *,**	271 *,**	–	–	–	279
Rhode Island	260 *,**	266 *,**	269 *,**	273	269 *	272
South Carolina	–	261 *,**	261 *,**	266 *,**	265 *,**	277
South Dakota	–	–	–	–	–	285
Tennessee	–	259 *,**	263 *,**	263	262 *,**	268
Texas	258 *,**	265 *,**	270 *,**	275	273	277
Utah	–	274 *,**	277 *,**	275 *,**	274 *,**	281
Vermont	–	–	279 *,**	283	281 *,**	286
Virginia	264 *,**	268 *,**	270 *,**	277 *	275 *,**	282
Washington	–	–	276 *,**	–	–	281
West Virginia	256 *,**	259 *,**	265 *,**	271	266 *,**	271
Wisconsin	274 *,**	278 *,**	283	–	–	284
Wyoming	272 *,**	275 *,**	275 *,**	277 *,**	276 *,**	284
Other jurisdictions						
District of Columbia	231 *,**	235 *,**	233 *,**	234 *,**	235 *,**	243
ODESS [2]	–	–	269 *,**	277	274 *,**	282
DoDDS [3]	–	–	275 *,**	278 *,**	278 *,**	286

–Not available.

*Significantly different from 2003 when only one jurisdiction or the nation is being examined.

**Significantly different from 2003 when using a multiple-comparison procedure based on all jurisdictions that participated in both years.

[1] National results for assessments prior to 2003 are based on the national sample, not on aggregated state samples.

[2] Department of Defense Domestic Dependent Elementary and Secondary Schools.

[3] Department of Defense Dependents Schools (Overseas).

NOTE: Comparative performance results may be affected by changes in exclusion rates for students with disabilities and limited-English-proficient students in the NAEP samples. In addition to allowing for accommodations. the accommodations-permitted results for national public schools (2000 and 2003) differ slightly fmm previous years' results, and from previously reported results for 2000. due to changes in sample weighting procedures. Significance tests were performed using unmunded numbers.

SOURCE: U.S. Department of Education. Institute of Education Sciences. National Center for Education Statistics. National Assessment of Educational Progress (NAEP). 1990, 1992, 1996, 2000, and 2003 Mathematics Assessments.

State vs. Nation Comparisons

Figures 1 and 2 show how the performance of students in participating states and jurisdictions compares to the performance of students in the national public-school sample.

In 2003, 26 of the 53 states and otherjurisdictions that participated at grade 4 had average scores that were higher than the national average, 11 had scores that were not found to differ significantly from the national average, and 16 had scores that were lower than the national average. Of the 53 states and other jurisdictions that participated at grade 8, 30 had average scores higher than the national average, 7 had average scores that were not found to differ significantly from the national average, and 16 had average scores that were lower than the national average.

Figure 1. Comparison of state and national public school average mathematics scores, grade 4: 2003

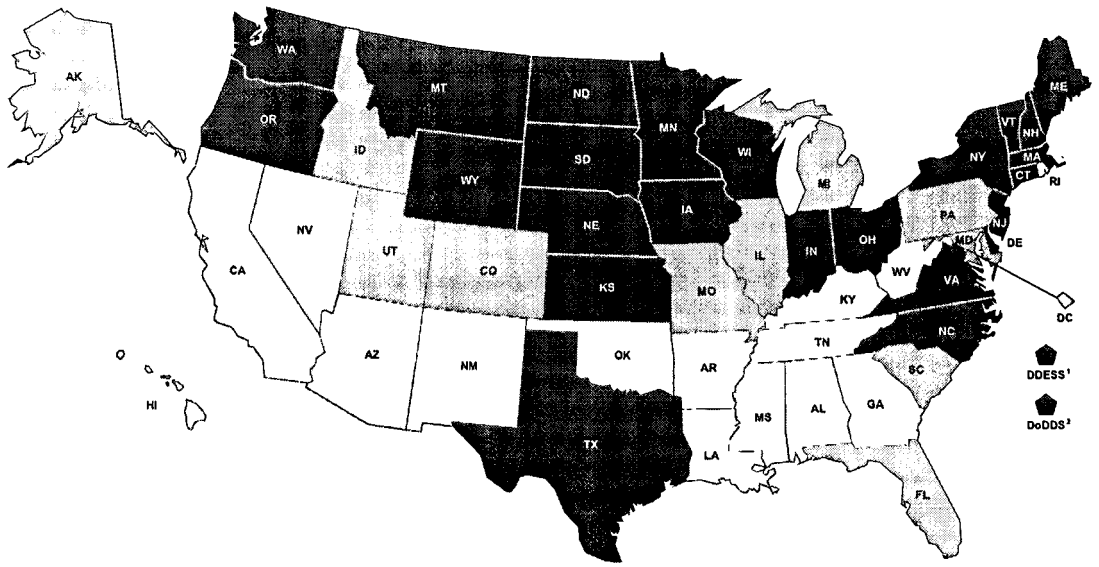
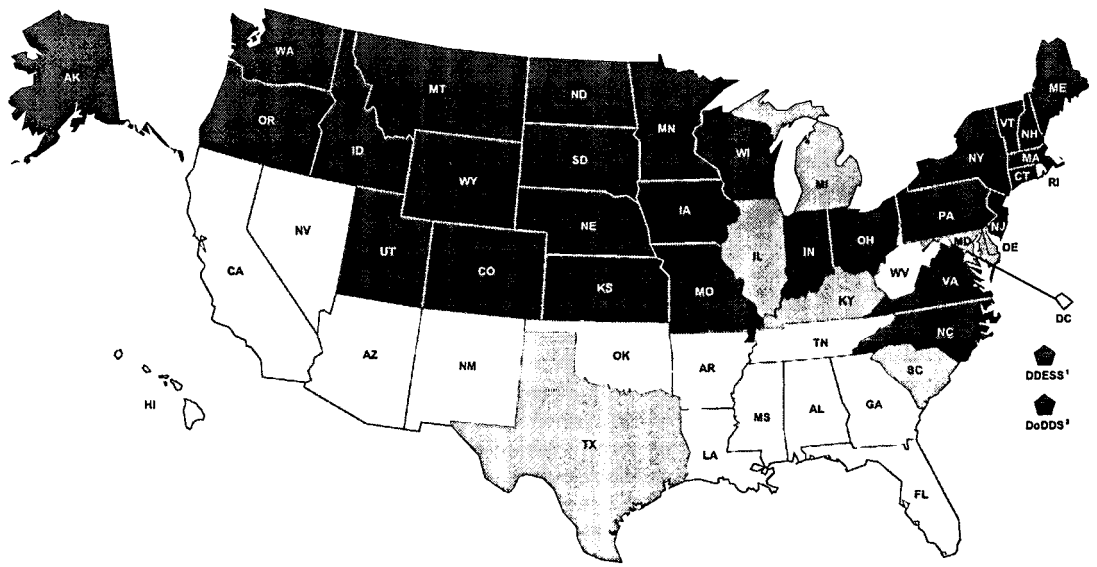


Figure 2. Comparison of state and national public school average mathematics scores, grade 8: 2003



State/jurisdiction had higher average scale score than nation.
State/jurisdiction was not found to be **significantly** different from **nation** In average scale score
State/jurisdiction had lower average scale score than nation.

'Department of Defense Domestic Dependent Elementary and **Secondary** Schools

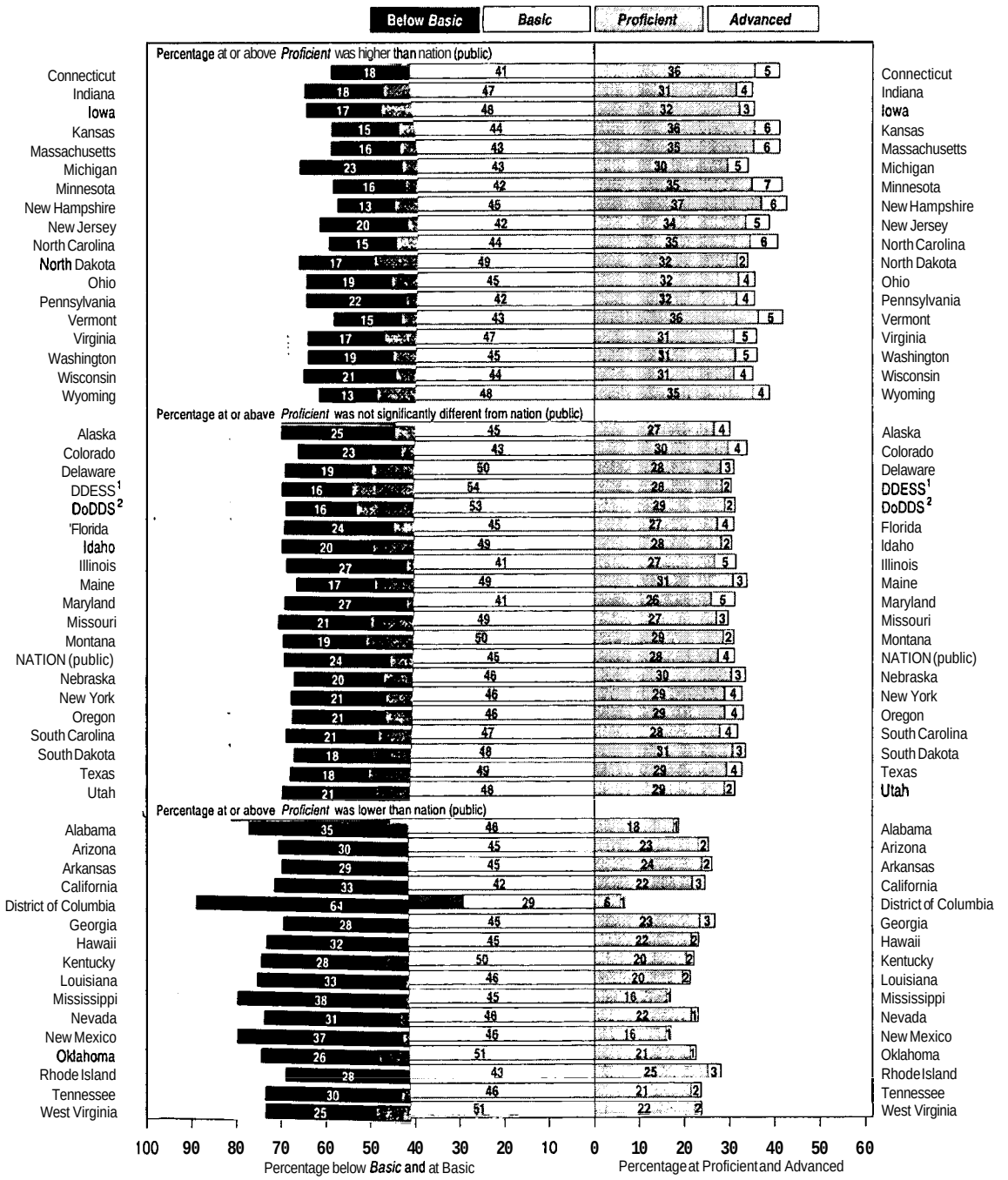
'Department of Defense Dependents Schools **(Overseas).**

SOURCE: **U.S.** Department of Education. Institute of Education Sciences. National Center for Education **Statistics,** National Assessment of Educational Progress **(NAEP),** 2003 Mathematics Assessment.

State Achievement-Level Results

The figures on this and the next page show the percentages of fourth- and eighth-graders at each achievement level for the states and jurisdictions that participated in the 2003 mathematics assessment. In both figures, the shaded bars represent the proportion of students at each of three achievement levels—Basic, *Proficient*, and Advanced—as well as the proportion below *Basic*. The central vertical line divides the proportion of students who fell below the *Proficient* level (i.e., at Basic or below *Basic*) from those who performed at or above the *Proficient* achievement level (i.e., at *Proficient* or at Advanced). Scanning down the horizontal bars to the right of the vertical line allows easy comparison of states' and jurisdictions' percentages of students at or above *Proficient*—the achievement level identified by the National Assessment Governing Board as the standard all students should reach. States and other jurisdictions are listed alphabetically within three groups; percentage at or above *Proficient* was higher than, not found to be significantly different from, or lower than the nation.

Figure 3. Percentage of students within each mathematics achievement level, grade 4 public schools: By state, 2003

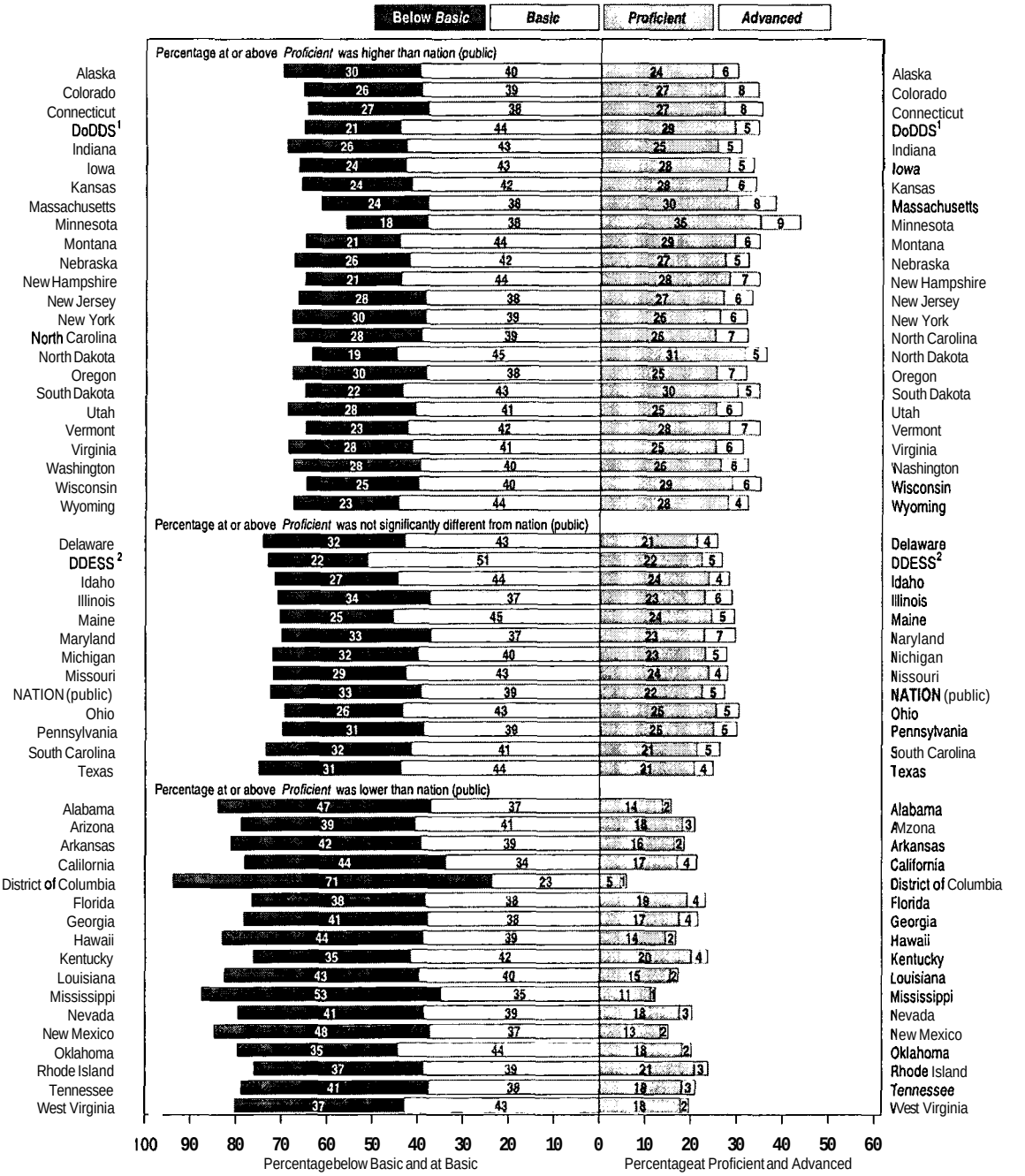


[1] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[2] Department of Defense Dependents Schools (Overseas).
NOTE: Detail may not sum to totals because of rounding. The shaded bars are graphed using unrounded numbers.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Assessment.

At grade 4, as shown in figure 3, **18** states and other jurisdictions had higher percentages of students at or above *Proficient* than the nation, 19 had percentages that were not found to be statistically different from the nation, and **16** had percentages that were lower than the nation.

At grade 8, as shown in figure **4, 24** states and other jurisdictions had higher percentages of students at or above *Proficient* than the nation, **12** had percentages that were not found to be significantly different from the nation, and 17 had percentages that were lower than the nation.

Figure 4. Percentage of students within each mathematics achievement level, grade 8 public schools: By state, 2003



[1]Department of Defense Dependents Schools (Overseas).
[2]Department of Defense Domestic Dependent Elementary and Secondary Schools.
NOTE: Detail may not sum to totals because of rounding. The shaded bars are graphed using unrounded numbers.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Assessment.

Percentage of Students at or Above Proficient Across Years by State

The percentage of students at or above the *Proficient* level across years is presented in table 3 for grade 4 and in table 4 for grade 8.

The percentage of fourth-graders at or above *Proficient* was higher in 2003 than in 2000 for all 43 states and jurisdictions that participated in both years. The percentages also increased from 1992 to 2003 for all 42 states and jurisdictions that participated in both those assessment years.

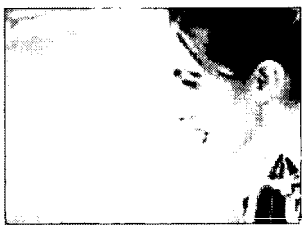


Table 3. Percentage of students at or above *Proficient* in mathematics, grade 4 public schools: By state, 1992–2003

	Accommodations not permitted			Accommodations permitted	
	1992	1996	2000	2000	2003
Nation (public) [1]	17 *	20 *	25 *	22 *	31
Alabama	10 *,**	11 *,**	14 *,**	13 *,**	19
Alaska	–	21 *,**	–	–	30
Arizona	13 *,**	15 *,**	17 *,**	16 *,**	25
Arkansas	10 *,**	13 *,**	13 *,**	14 *,**	26
California	12 *,**	11 *,**	15 *,**	13 *,**	25
Colorado	17 *,**	22 ■■■■	–	–	34
Connecticut	24 *,**	31 *,**	32 *,**	31 *,**	41
Delaware	17 *,**	16 *,**	–	–	31
Florida	13 *,**	15 *,**	–	–	31
Georgia	15 *,**	13 *,**	18 *,**	17 *,**	27
Hawaii	15 *,**	16 *,**	14 *,**	14 *,**	23
Idaho	16 *,**	–	21 *,**	20 *,**	31
Illinois	–	–	21 *,**	20 *,**	32
Indiana	16 *,**	24 *,**	31 *	30 *,**	35
Iowa	26 *,**	22 *,**	28 *,**	26 *,**	36
Kansas	–	–	30 *,**	29 *,**	41
Kentucky	13 *,**	16 *,**	17 *,**	17 *,**	22
Louisiana	8 *,**	8 *,**	14 *,**	14 *,**	21
Maine	27 *,**	27 *,**	25 *,**	23 *,**	34
Maryland	18 *,**	22 *,**	22 *,**	21 *,**	31
Massachusetts	23 *,**	24 *,**	33 *,**	31 *,**	41
Michigan	18 *,**	23 *,**	29 *,**	28 *,**	34
Minnesota	26 *,**	29 *,**	34 *,**	33 *,**	42
Mississippi	6 *,**	8 *,**	9 *,**	9 *,**	17
Missouri	19 *,**	20 *,**	23 *,**	23 *,**	30
Montana	–	22 *,**	25 *,**	24 *,**	31
Nebraska	22 *,**	24 *,**	24 *,**	24 *,**	34
Nevada	–	14 *,**	16 *,**	16 *,**	23
New Hampshire	25 *,**	–	–	–	43
New Jersey	25 *,**	25 *,**	–	–	39
New Mexico	11 *,**	13 *,**	12 *,**	12 *,**	17
New York	17 *,**	20 *,**	22 *,**	21 *,**	33
North Carolina	13 *,**	21 *,**	28 *,**	25 *,**	41
North Dakota	22 *,**	24 *,**	25 *,**	25 *,**	34
Ohio	16 *,**	–	26 *,**	25 *,**	36
Oklahoma	14 *,**	–	16 *,**	16 *,**	23
Oregon	–	21 *,**	23 *,**	23 *,**	33
Pennsylvania	22 *,**	20 *,**	–	–	36
Rhode Island	13 *,**	17 *,**	23 *,**	22 *,**	28
South Carolina	13 *,**	12 *,**	18 *,**	18 *,**	32
South Dakota	–	–	–	–	34
Tennessee	10 *,**	17 *,**	18 *,**	18 *,**	24
Texas	15 *,**	25 *,**	27 *,**	25 *,**	33
Utah	19 *,**	23 *,**	24 *,**	23 *,**	31
Vermont	–	23 *,**	29 *,**	29 *,**	42
Virginia	19 *,**	19 *,**	25 *,**	24 *,**	36
Washington	–	21 *,**	–	–	36
West Virginia	12 *,**	19 *,**	18 *,**	17 *,**	24
Wisconsin	24 *,**	27 *,**	–	–	35
Wyoming	19 *,**	19 *,**	25 *,**	25 *,**	39
Other jurisdictions					
District of Columbia	5 *,**	5 *,**	6	5 *,**	7
DDESS [2]	–	20 *,**	24 *,**	23 *,**	30
DoDDS [3]	–	19 *,**	22 *,**	21 *,**	31

–Not available.

*Significantly different from 2003 when only one jurisdiction or the nation is being examined.

**Significantly different from 2003 when using a multiple-comparison procedure based on all jurisdictions that participated in both years.

[1] National results for assessments prior to 2003 are based on me national sample. not on aggregated state samples

[2] Department of Defense Domestic Dependent Elementary and Secondary Schools.

[3] Department of Defense Dependents Schools (Overseas).

NOTE: State-level data were not collected in 1990. Comparative performance results may be affected by changes in exclusion rates for den ; with disabilities and limited-English proficient students in the NAEP samples. In addition to allowing for accommodations the accommodations-permitted results for national public schools (2000 and 2003) differ slightly from previous years' results, and from previously reported results for 2000, due to changes in sample weighting procedures. Significance tests were performed using unmunded numbers.

SOURCE: U.S. Department of Education. Institute of Education Sciences. National Center for Education Statistics. National Assessment of Educational Progress (NAEP). 1992. 1996.2000. and 2003 Mathematics Assessments.

Among the 42 states and jurisdictions that participated in both the 2000 and 2003 eighth-grade assessments, 18 showed an increase in the percentage of students at or above *Proficient* and none showed a decline. The percentage of eighth-graders at or above *Proficient* was higher in 2003 than in 1990 for all 38 states and jurisdictions that participated in both years.

Table 4. Percentage of students at or above *Proficient* in mathematics, grade 8 public schools: By state, 1990–2003

	Accommodations not permitted				Accommodations permitted	
	1990	1992	1996	2000	2000	2003
Nation (public) [1]	15 *	20 *	23 *	26	25 *	27
Alabama	9 *,**	10 *,**	12	16	16	16
Alaska	–	–	30	–	–	30
Arizona	13 *,**	15 *,**	18	21	20	21
Arkansas	9 *,**	10 *,**	13 *,**	14 *,**	13 *,**	19
California	12 *,**	16 *,**	17 *,**	18 *	17 *	22
Colorado	17 *,**	22 *,**	25 *,**	–	–	34
Connecticut	22 *,**	26 *,**	31 *	34	33	35
Delaware	14 *,**	15 *,**	19 *,**	–	–	26
florida	12 *,**	15 *,**	17 *,**	–	–	23
Georgia	14 *,**	13 *,**	16 *,**	19	19	22
Hawaii	12 *,**	14 *,**	16	16	16	17
Idaho	18 *,**	22 *,**	–	27	26	28
Illinois	15 *,**	–	–	27	26	29
Indiana	17 *,**	20 *,**	24 *,**	31	29	31
Iowa	25 *,**	31	31	–	–	33
Kansas	–	–	–	34	34	34
Kentucky	10 *,**	14 *,**	16 *,**	21	20	24
Louisiana	5 *,**	7 *,**	7 *,**	12 *,**	11 *,**	17
Maine	–	25 *	31	32	30	29
Maryland	17 *,**	20 *,**	24 *	29	27	30
Massachusetts	–	23 *,**	28 *,**	32 *,**	30 *,**	38
Michigan	16 *,**	19 *,**	28	28	28	28
Minnesota	23 *,**	31 *,**	34 *,**	40	39 *	44
Mississippi	–	6 *,**	7 *,**	8 *,**	9 *,**	12
Missouri	–	20 *,**	22 *,**	22 *,**	21 *,**	28
Montana	27 *,**	–	32	37	36	35
Nebraska	24 *,**	26 *,**	31	31	30	32
Nevada	–	–	–	20	18	20
New Hampshire	20 *,**	25 *,**	–	–	–	35
New Jersey	21 *,**	24 *,**	–	–	–	33
New Mexico	10 *,**	11 *,**	14	13	12 *	15
New York	15 *,**	20 *,**	22 *,**	26 *,**	24 *,**	32
North Carolina	9 *,**	12 *,**	20 *,**	30	27 *,**	32
North Oakota	27 *,**	29 *,**	33	31 *,**	30 *,**	36
Ohio	15 *,**	18 *,**	–	31	30	30
Oklahoma	13 *,**	17 *,**	–	19	18	20
Oregon	21 *,**	–	26 *,**	32	31	32
Pennsylvania	17 *,**	21 *,**	–	–	–	30
Rhode Island	15 *,**	16 *,**	20 *	24	22	24
South Carolina	–	15 *,**	14 *,**	18 *,**	17 *,**	26
South Dakota	–	–	–	–	–	35
Tennessee	–	12 *,**	15 *,**	17	16 *	21
Texas	13 *,**	18 *,**	21	24	24	25
Utah	–	22 *,**	24 *,**	26 *,**	25 *,**	31
Vermont	–	–	27 *,**	32	31 *	35
Virginia	17 *,**	19 *,**	21 *,**	26 *,**	25 *,**	31
Washington	–	–	26 *,**	–	–	32
West Virginia	9 *,**	10 *,**	14 *,**	18	17	20
Wisconsin	23 *,**	27 *,**	32	–	–	35
Wyoming	19 *,**	21 *,**	22 *,**	25 *,**	23 *,**	32
Other jurisdictions						
District of Columbia	3 *,**	4	5	6	6	6
0DESS [2]	–	–	21	27	24	27
DoDDS [3]	–	–	23 *,**	27 *,**	27 *,**	35

–Not available.

*Significantly different fmm 2003 when only one jurisdiction or the nation is being examined.

**Significantly different from 2003 when using a multiple-comparison procedure based on all jurisdictions that participated in both years.

[1] National results for assessments prior to 2003 are based on the national sample, not on aggregated state samples.

[2] Department of Defense Domestic Dependent Elementary and Secondary Schools.

[3] Department of Defense Dependents Schools (Overseas).

NOTE: Comparative performance results may be affected by changes in exclusion rates for students with disabilities and limited-English-proficient students in the NAEP samples. In addition to allowing for accommodations, the accommodations-permitted results for national public schools (2000 and 2003) differ slightly fmm previous years' results, and from previously reported results for 2000, due to changes in sample weighting procedures. Significance tests were performed using unmunded numbers.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics. National Assessment of Educational Progress (NAEP). 1990, 1992, 1996, 2000, and 2003 Mathematics Assessments.

Subgroup Results Reveal How Various Groups of Students Performed on NAEP

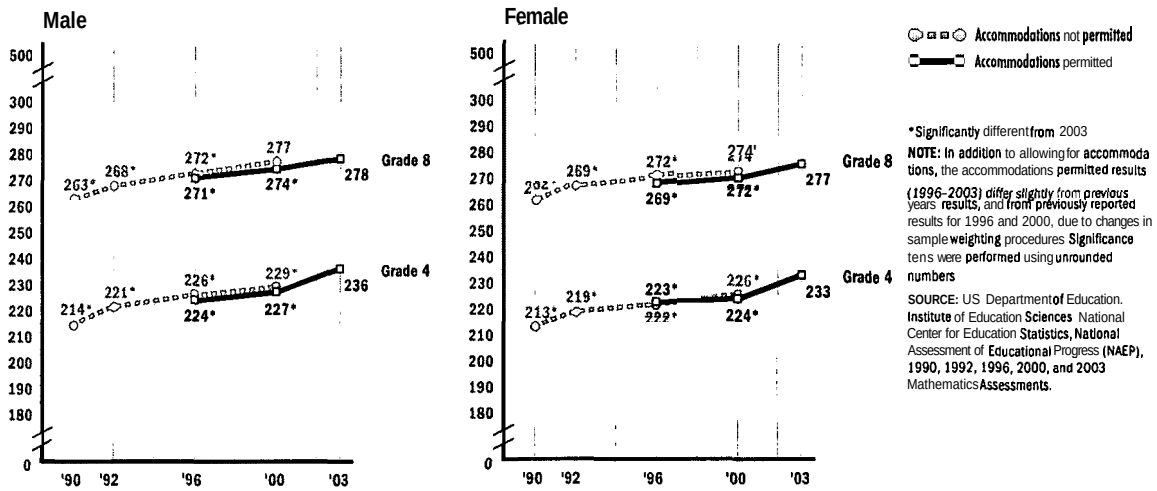
In addition to reporting on overall students' performance on its assessments, NAEP also reports on the performance of various subgroups of students. The mathematics performance of subgroups of students in **2003** indicates whether they have progressed since earlier assessments and allows for comparisons with the performance of other subgroups in **2003.**

When reading these subgroup results, it is important to keep in mind that there is no simple, cause-and-effect relationship between membership in a subgroup and achievement in NAEP. A complex mix of educational and socioeconomic factors may interact to affect student performance.

Average Mathematics Scores by Gender

The figures below present average mathematics scores for males and females across assessment years. At both grades 4 and 8, the average scores for male and female students were higher in **2003** than in any of the previous assessment years. In **2003,** male students scored higher on average than female students at both grades.

Average mathematics scale scores, by gender, grades 4 and 8: 1990–2003



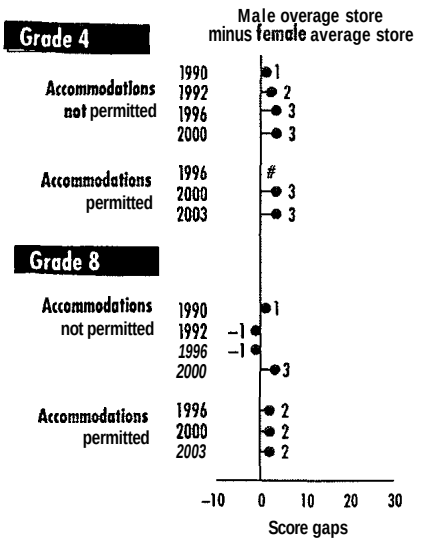
*Significantly different from 2003

NOTE: In addition to allowing for accommodations, the accommodations permitted results (1996–2003) differ slightly from previous years' results, and from previously reported results for 1996 and 2000, due to changes in sample weighting procedures. Significance tests were performed using unrounded numbers.

SOURCE: US Department of Education. Institute of Education Sciences National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, 2000, and 2003 Mathematics Assessments.

Average Mathematics Score Gaps Between Males and Females

In **2003,** male students scored higher on average than female students by **3** points at grade 4 and by 2 points at grade 8. The gap in **2003 was** not found to be significantly different from the gap in any of the previous assessment years.



The estimate rounds to zero

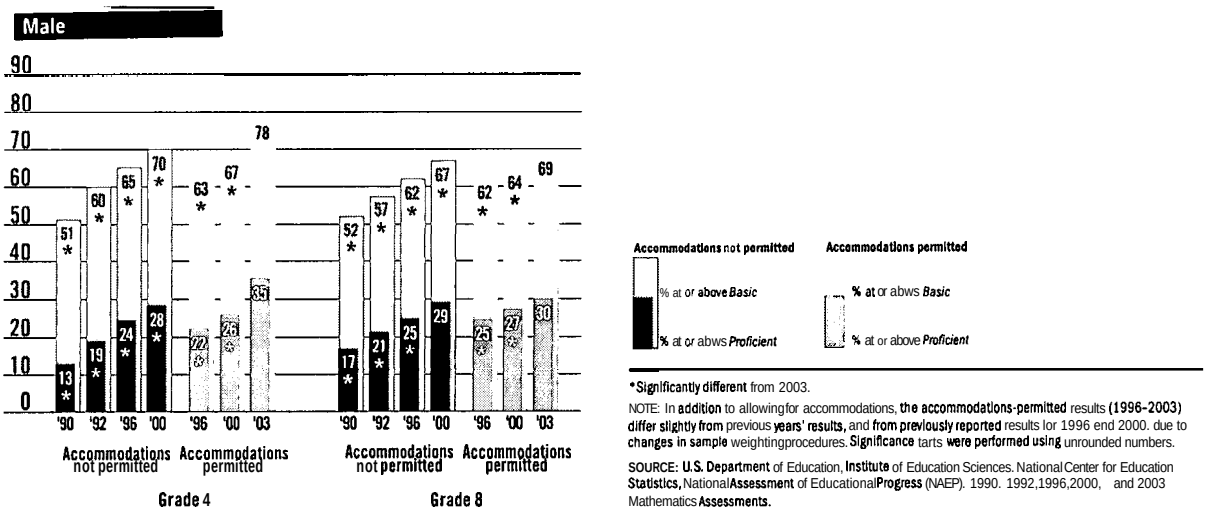
NOTE: Score gaps are calculated based on differences between unrounded average scale scores. Significance tests were performed using unrounded numbers.

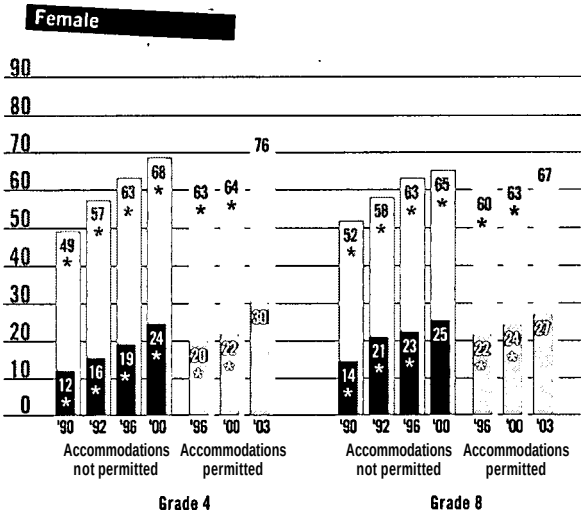
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, 2000, and 2003 Mathematics Assessments.

Achievement-Level Results by Gender

The percentages of male and female students at or above the *Basic* and *Proficient* mathematics achievement levels are presented below. At grade 4, the percentages of male and female students at or above *Basic* and *Proficient* were higher in 2003 than in any of the previous assessment years. At grade 8, the percentages of male and female students at or above *Basic* and *Proficient* were also higher in 2003 than in all previous assessment years.

Percentages of students at or above *Basic* and *Proficient* in mathematics, by gender, grades 4 and 8: 1990–2003

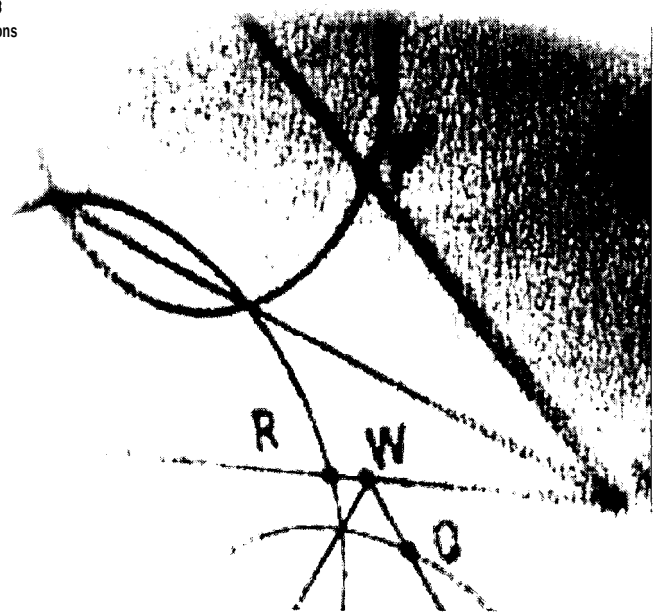




* Significantly different from 2003.

NOTE: In addition to allowing for accommodations, the accommodations-permitted results (1996–2003) differ slightly from previous years' results, and from previously reported results lor 1996 end 2000. due to changes in sample weighting procedures. Significance tarts were performed using unrounded numbers.

SOURCE: U.S. Department of Education, Institute of Education Sciences. National Center for Education Statistics, National Assessment of Educational Progress (NAEP). 1990. 1992,1996,2000, and 2003 Mathematics Assessments.



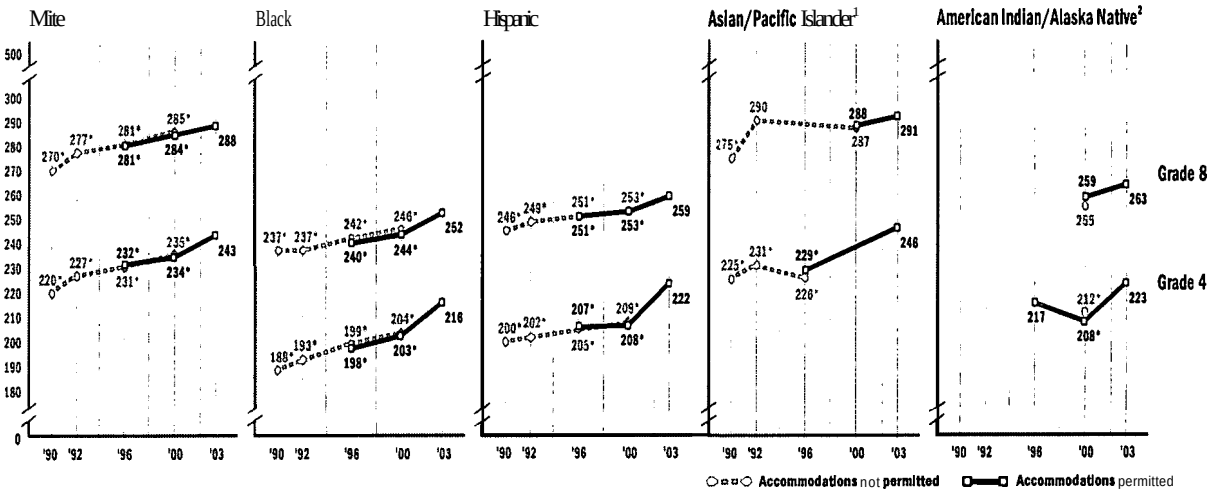
Average Mathematics Scores by Race/Ethnicity

Students who took the NAEP mathematics assessment were identified as belonging to one of the racial/ethnic subgroups shown in the figures below or as "other" based on information obtained from school records. The results presented here for 1990 through 2000 differ from those presented in earlier mathematics reports in which results were reported for five racial/ethnic categories based on student self-identification.

At grades 4 and 8, White, Black, and Hispanic students all had higher average scores in 2003 than in any of the previous assessment years. The average score of Asian/Pacific Islander students was higher in 2003 than in 1990 at both grades 4 and 8. There was no significant change detected in the average score for Asian/Pacific Islander students between 2000 and 2003 at grade 8. American Indian/Alaska Native students had higher average scores in 2003 than in 2000 at grade 4, but the apparent increase at grade 8 was not found to be statistically significant.

At both grades 4 and 8, Asian/Pacific Islander students scored higher on average in 2003 than White students. Both White and Asian/Pacific Islander students had higher average scores than Black, Hispanic, and American Indian/Alaska Native students. Hispanic and American Indian/Alaska Native students scored higher on average than Black students at both grades.

Average mathematics scale scores, by race/ethnicity, grades 4 and 8: 1990–2003



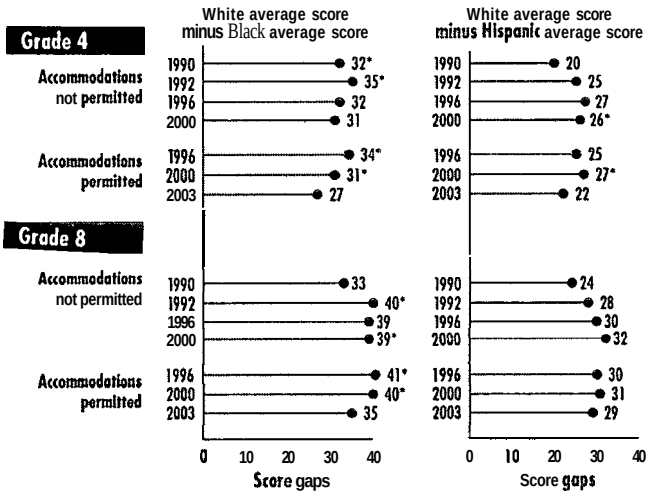
*Significantly different from 2003.
[1]Special analyses raised concerns about the accuracy and precision of national grade 8 Asian/Pacific Islander results in 1996, and grade 4 Asian/Pacific Islander results in 2000. As a result, they are omitted from this report.
[2]Sample size was insufficient to permit a reliable estimate for American Indian/Alaska Native students in 1990 and 1992 at grades 4 and 8, and in 1996 at grade 8.
NOTE: At each grade, approximately 1 percent of students were classified as American Indian/Alaska Native or "other" (not shown). In addition to allowing for accommodations, the accommodations permitted results (1996-2003) differ slightly from previous years' results, and from previously reported results for 1996 and 2000, due to changes in sample weighting procedures. Significance tests were performed using unrounded numbers.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, 2000, and 2003 Mathematics Assessments.

Average Mathematics Score Gaps Between Selected Racial/Ethnic Subgroups

Average score gaps across assessment years between White and Black students and between White and Hispanic students are presented in the figures shown to the right.

At grade 4, the score gap between White and Black students decreased between 2000 and 2003, and was smaller in 2003 than in 1990. The gap between White and Hispanic fourth-graders also narrowed between 2000 and 2003, but the gap in 2003 was not found to be significantly different from that in 1990.

At grade 8, the score gap between White and Black students was narrower in 2003 than in 2000, but the gap in 2003 was not found to differ significantly from 1990. The score gap between White and Hispanic eighth-graders in 2003 was not found to differ significantly from the gap in any of the previous assessment years.



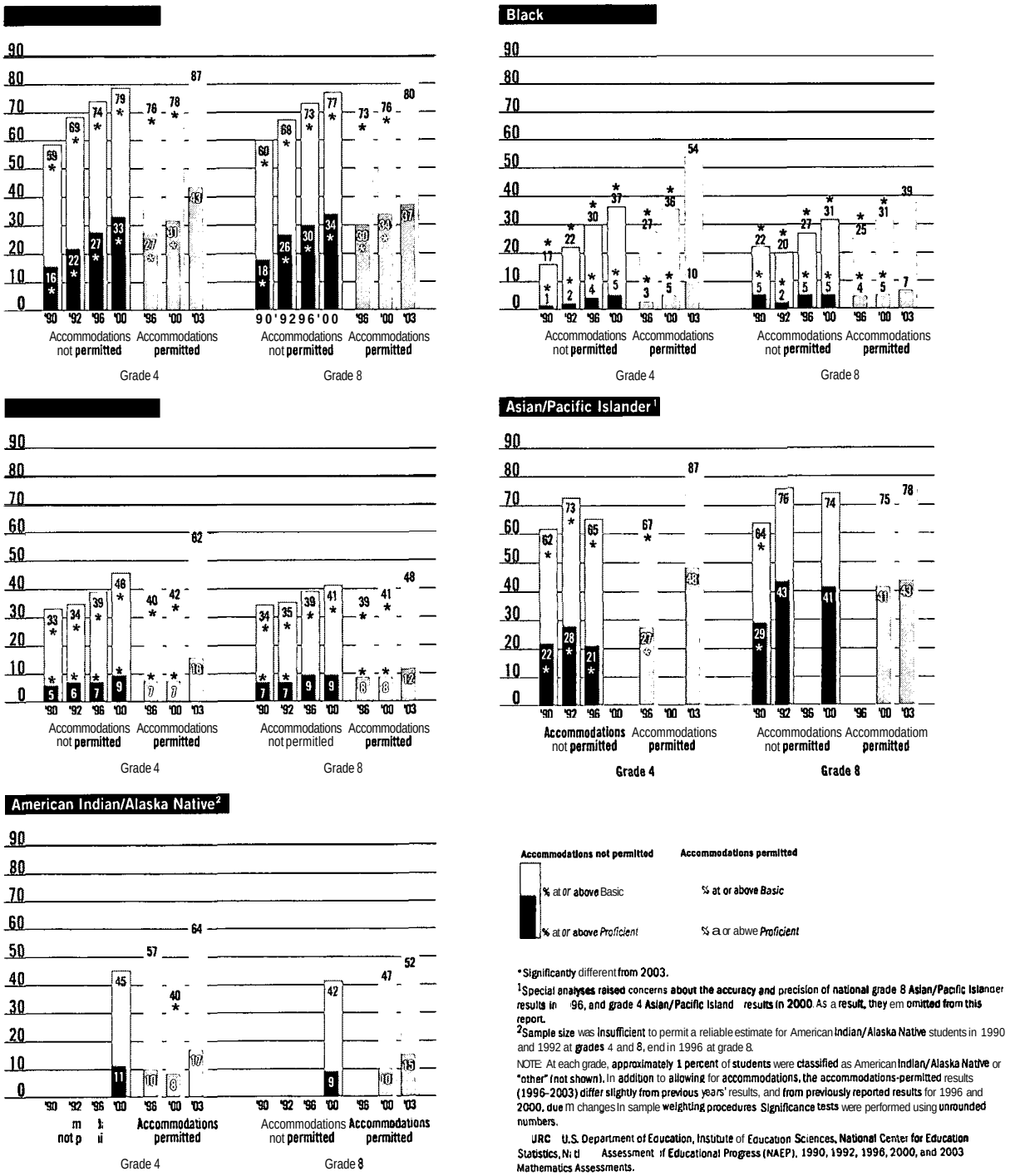
*Significantly different from 2003.
NOTE: Score gaps are calculated based on differences between unrounded average scale scores. Significance tests were performed using unrounded numbers.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, 2000, and 2003 Mathematics Assessments.

Achievement-Level Results by Race/Ethnicity

Achievement-level results for the racial/ethnic subgroups are presented in the figures below. At grade 4, the percentages of White, Black, and Hispanic students at or above the *Basic* and *Proficient* levels were higher in 2003 than in any of the previous assessment years. The percentages of Asian/Pacific Islander students at or above *Basic* and *Proficient* were higher in 2003 than in 1990. The percentage of American Indian/Alaska Native students at or above *Basic* was higher in 2003 than in 2000, but the apparent increase in the percentage at or above *Proficient* was not found to be statistically significant.

At grade 8, the percentages of White, Black, and Hispanic students at or above *Basic* and *Proficient* were higher in 2003 than in any of the previous assessment years. The percentages of Asian/Pacific Islander students at or above *Basic* and *Proficient* were higher in 2003 than in 1990.

Percentages of students at or above Basic and Proficient in mathematics, by race/ethnicity, grades 4 and 8: 1990–2003



*Significantly different from 2003.

[1]Special analyses raised concerns about the accuracy and precision of national grade 8 Asian/Pacific Islander results in 1996, and grade 4 Asian/Pacific Island results in 2000. As a result, they em omitted from this report.

[2]Sample size was insufficient to permit a reliable estimate for American Indian/Alaska Native students in 1990 and 1992 at grades 4 and 8, end in 1996 at grade 8.

NOTE: At each grade, approximately 1 percent of students were classified as American Indian/Alaska Native or "other" (not shown). In addition to allowing for accommodations, the accommodations-permitted results (1996–2003) differ slightly from previous years' results, and from previously reported results for 1996 and 2000, due m changes In sample weighting procedures Significance tests were performed using unrounded numbers.

URC U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, Ni tl Assessment of Educational Progress (NAEP), 1990, 1992, 1996, 2000, and 2003 Mathematics Assessments.

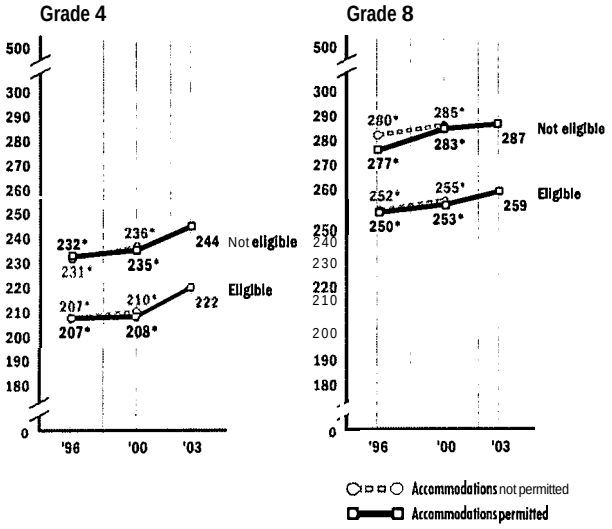
Average Mathematics Scores by Students' Eligibility for Free/Reduced-Price School Lunch

NAEP collects data on students' eligibility for free/reduced-price lunch as an indicator of family economic status. Eligibility for free and reduced-price lunches is determined by students' family income in relation to the federally established poverty level. Free lunch qualification is set at 130 percent of the poverty level, and reduced-price lunch qualification is set at between 130 and 185 percent of the poverty level. Information regarding students' eligibility in 2003 was not available for 10 percent of fourth-graders and 11 percent of eighth-graders, either because their schools did not participate in the National School Lunch Program or for other reasons.

At both grades 4 and 8, average mathematics scores in 2003 were higher than the scores in 1996 and 2000 both for students who were eligible and for students who were not eligible for free/reduced-price lunch.

The average mathematics score for students who were eligible for free/reduced-price lunch was lower than the average score for students who were not eligible at both grades.

Results broken down by student's eligibility for free lunch and eligibility for reduced-price lunch are available on the NAEP web site (http://www.nces.ed.gov/nationsreportcard/naepdata).



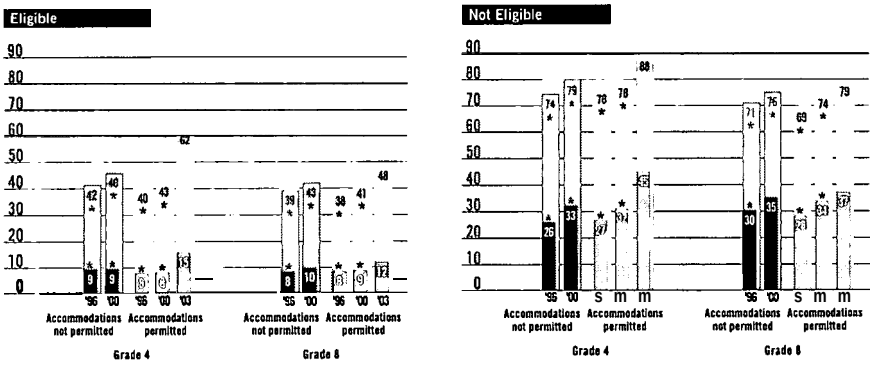
*Significantly different from 2003.

NOTE: In addition to allowing for accommodations, the accommodations-permitted results (1996.2003) differ slightly fmm previously reported results for 1996 and 2000, due to changes in sample weighting pmcedures. Significance tests were performed using unmunded numbers.

SOURCE: U.S. Department of Education, Institute of Education Sciences. Notional Center for EducaUon Statistics. National Assessment of Educational Progress (NAEP). 1996.2000. and 2003 Mathematics Assessments.

Achievement-Level Results by Students' Eligibility for Free/Reduced-Price hunch

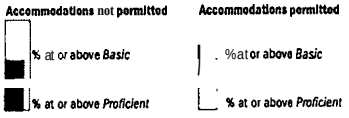
At both grades 4 and 8, the percentages of students at or above *Basic* and Proficient were higher in 2003 than in 1996 and 2000 for both students who were eligible and students who were not eligible for free/reduced-price lunch.



*Significantly different from 2003.

NOTE: In addition to allowing for accommodations, the accommodations-permitted results (1996-20031 differ slightly from previously reported results lor 1996 and 2000. due to changes in sample weighting procedures. Significance tests wem performed using unrounded numbers.

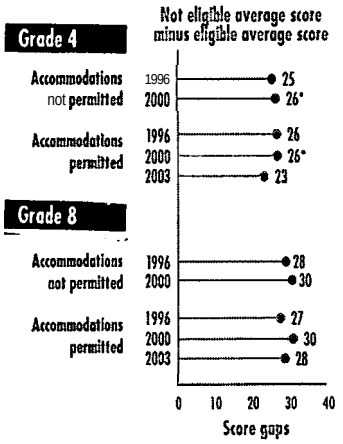
SOURCE: U.S. Department of Education. Institute of EducaUon Sciences, Nauonal Center for EducaUon Statistics, National Assessment of Educational Progress (NAEP). 1996.2000. and 2003 Mathematics Assessments.



Average Mathematics Score Gaps Between Students Who Were Eligible and Those Who Were Not Eligible for Free/Reduced-Price Lunch

At grade 4, the average score gap between students who were eligible and students who were not eligible for free/reduced-price lunch decreased from 2000 to 2003, but the gap in 2003 was not found to be significantly different from the gap in 1996.

No significant change was detected in the gap in 2003 compared to the gap in any of the previous assessment years at grade 8.



*Significantly different from 2003.

NOTE: Score gaps am calculated based on differences between unfounded average scale scores. Significance tests ware performed using unmunded numbers.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP). 1996, 2000, and 2003 Mathematics Assessments.

Sample Mathematics Assessment Questions

The following pages present sample questions from the **NAEP 2003** Mathematics Assessment. Students answered a combination of multiple-choice and constructed-response questions. Some constructed-response questions required students to provide answers to computation problems or to describe solutions in one or two sentences. Extended constructed-response questions required students to provide longer written answers, in order to measure students' ability to reason, communicate, and make connections between concepts and skills, either across the mathematics content areas or from mathematics to other curricular areas.

The tables presented here with each sample question show the percentage of students who answered a multiple-choice question correctly or whose responses to a constructed-response question were rated at or above a particular score level, first as the overall percentage and then as the percentage of students at each achievement level who answered successfully. For the multiple-choice questions shown, the oval corresponding to the correct response is filled in. For the constructed-response questions, sample student responses are presented. In addition, the mathematics content area and mathematics ability assessed by each question are identified.

Additional sample mathematics questions from the **2003** and previous assessments are available on the **NAEP** web site (http://nces.ed.gov/nationsreportcard/itmrls).

Grade 4 Sample Questions and Responses

Fourth-Grade Multiple-Choice Question

Students are expected to be able to compute with numbers at each grade level assessed by NAEP. Some questions, such as this one, are administered in a section that does not permit calculator use, Although for this question students are instructed to add, for other questions, presented in the context of a story problem, students must decide whether to add, subtract, multiply, or divide.

	Percentage correct			
Overall percentage correct	Below *Basic* 213 or below[1]	At *Basic* 214–248[1]	At *Proficient* 249–281[1]	At *Advanced* 282 or above[1]
89	79	91	95	97

[1]NAEP mathematics composite scale range.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Assessment.

Add:
$$\begin{array}{r} 238 \\ +\ 462 \\ \hline \end{array}$$

(A) 600
(B) 690
(C) 700
(D) 790

Mathematics Content Area:	Mathematics Ability:
Number Sense, Properties, and Operations	Procedural Knowledge

Fourth-Grade Multiple-Choice Question

Fourth-graders have been taught properties of common geometric figures, including how to find the pedmeter. To solve this problem, the student needs to know that a square has 4 sides of equal length. In order for the pedmeter to be 36 inches, each side must be 36 ÷ 4, or 9 inches long.

	Percentage correct			
Overall percentage correct	Below *Basic* 213 or below[1]	At *Basic* 214–248[1]	At *Proficient* 249–281[1]	At *Advanced* 282 or above[1]
47	19	40	75	92

[1]NAEP mathematics composite scale range.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Assessment.

The perimeter of a square is 36 inches. What is the length of one side of the square?

(A) 4 inches
(B) 6 inches
(C) 9 inches
(D) 18 inches

Mathematics Content Area:	Mathematics Ability:
Measurement	Problem Solving

Fourth-Grade Extended Constructed-Response Question

In the early grades, students begin to develop an understanding of fractions by relating them to various models. This NAEP extended constructed-response question was designed to assess fourth-grade students' understanding of equivalent fractions. The question uses a shaded region model in which three rectangular regions of equal length are divided into 6 equal parts, 2 equal parts, and 10 equal parts, respectively. Students are told that the first strip shows 3/6 and are asked what fraction the other strips show. The expected answers are 1/2 and 5/10. By asking, "What do the fractions shown in A, B, and C have in common?" the question assesses students' understanding of equivalent fractions. Students are also asked to shade two other strips to represent different fractions that are equivalent to the ones shown.

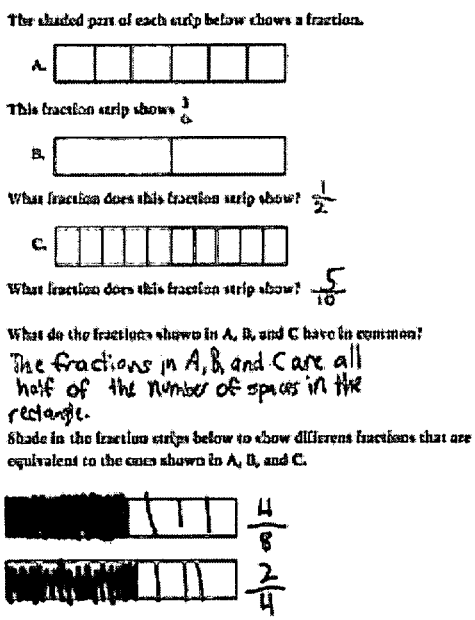
Answers to this question were scored on five levels: "Incorrect," "Minimal: "Partial: "Satisfactory: or "Extended:

The first sample response was rated only "Satisfactory" because the shaded fraction strip for 2/4 was not accurate.

	Percentage "Satisfactory" or better			
Overall percentage "Satisfactory or better"	Below *Basic* 213 or below[1]	At *Basic* 214–248[1]	At *Proficient* 249–281[1]	At *Advanced* 282 or above[1]
30	2	19	58	89

[1]NAEP mathematics composite scale range.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Assessment.

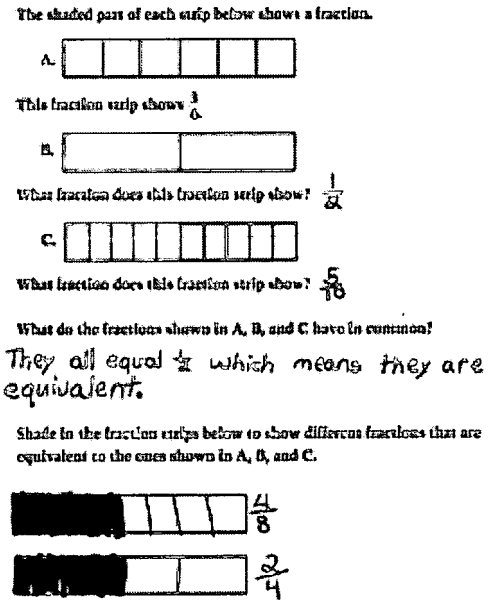
Sample "Satisfactory" Response



	Percentage "Extended"			
Overall percentage "Extended"	Below *Basic* 213 or below[1]	At *Basic* 214–248[1]	At *Proficient* 249–281[1]	At *Advanced* 282 or above[1]
19	1	9	40	77

[1]NAEP mathematics composite scale range.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Assessment.

Sample "Extended" Response



Mathematics Content Area:	Mathematics Ability:
Number Sense, Properties, and Operations	Problem Solving

Grade 8 Sample Questions and Responses

Eighth-Grade Short Constructed-Response Question

Percentage "Satisfactory"				
Overall percentage "Satisfactory"	Below *Basic* 261 or below[1]	At *Basic* 262–298[1]	At *Proficient* 299–332[1]	At *Advanced* 333 or above[1]
73	52	78	89	94

[1]NAEP mathematics composite scale range.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Assessment.

Students are expected to be able to compute with numbers at each **grade** level assessed by NAEP. By eighth grade, students are expected to be able to **carry** out long division. This sample question is presented **in** a constructed-response format because if **it** were a multiple-chdice question students could use the **choices** and **work** backwards by multiplying to find the answer, This question was in a section that did not permit **calculator use.**

Answers to this question were as "Unsatisfactory" or "Satisfactory."

Divide:

$21\overline{)504}$ 24

Answer: _____

24 Check:
21|504 21
-42 ×24
84 84
-84 42
504

Mathematics Content Area:	Mathematics Ability:
Number Sense, Properties, and Operations	Procedural Knowledge

Eighth-Grade Multiple-Choice Question

Percentage correct				
Overall percentage correct	Below *Basic* 261 or below[1]	At *Basic* 262–298[1]	At *Proficient* 299–332[1]	At *Advanced* 333 or above[1]
77	52	84	95	99

[1]NAEP mathematics composite scale range.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Assessment.

Algebraic concepts are included in the mathematics curriculum before eighth grade. This sample question uses the variable x in the expression $x + 2$. The student is asked to Identify a value of x that would make x + 2 less than 12. Of the choices listed, only 8 is a value that satisfies this condition.

If the value of the expression $x + 2$ is less than 12, which of the following could be a value of x?

Ⓐ 16
Ⓑ 14
Ⓒ 12
Ⓓ 10
● 8

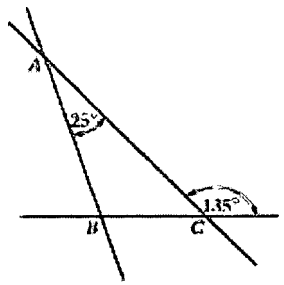
Mathematics Content Area:	Mathematics Ability:
Geometry and Spatial Sense	Problem Solving

Eighth-Grade Multiple-Choice Question

Percentage correct				
Overall percentage correct	Below *Basic* 261 or below[1]	At *Basic* 262–298[1]	At *Proficient* 299–332[1]	At Advanced 333 or above[1]
33	19	29	49	77

[1]NAEP mathematics composite scale range.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP) *2003* Mathematics Assessment.

This **multiple-choice** geometry question requires students to use information **given** in a figure to find the degree measure of $\angle ABC$. The question requires students to use what they know about angles related to a triangle to find a missing angle measure. The expected solution involves finding the measure of $\angle ACB$. This angle measure is **180° - 135°** or **45°.** Because the sum of the degree measures of all angles in a triangle is **180°,** the measure of $LABC$ is **180° - 25° - 45°,** or **110°.**



In the triangle, what is the degree measure of $\angle ABC$?

Ⓐ 45
Ⓑ 100
● 110
Ⓓ 135
Ⓔ 160

Mathematics Content Area:	Mathematics Ability:
Geometry and Spatial Sense	Problem Solving

Eighth-Grade Extended Constructed-Response Question

The areas of some geometric figures cannot be calculated directly, but the figure can be partitioned into simpler figures whose areas can be easily determined. **This** extended constructed-response question requires students to identify different ways of **finding** the area of a hallway. One way to partition the hallway is shown. The corresponding area **is 50** + 35 = **85.** Students are asked to show three other ways the hallway can be divided and for each of them to show how the area can be calculated.

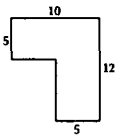
Answers to this question were scored on five levels: **"Incorrect," "Minimal,"** "Partial: "Satisfactory: or "Extended:

The first sample response was **only** rated "Satisfactory" because the computation given to calculate the area for the first figure should have been **5 x 5** + **12 x 5.**

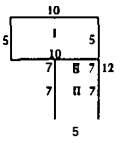
	Percentage "Satisfactory" or better			
Overall percentage "Satisfactory" or better	Below *Basic* 261 or below[1]	At *Basic* 262–298[1]	At *Proficient* 299–332[1]	At *Advanced* 333 or above[1]
10	#	2	23	66

#The estimate rounds to zero.
[1]NAEP mathematics composite scale range.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Assessment.

Sample "Satisfactory" Response



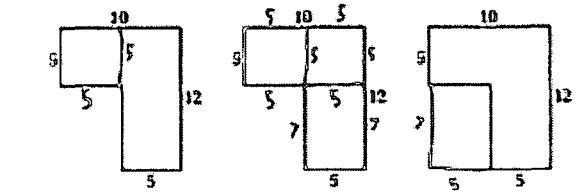
Ted wants to purchase floor **covering** for the hallway shown above. He knows there are many ways to find the area of the hallway. One way is to divide the hallway into the sections shown below and then add together the area of each section.



Area of Hallway = Area of Region I + Area of Region II

Area = (5 x 10) + (7 x 5)

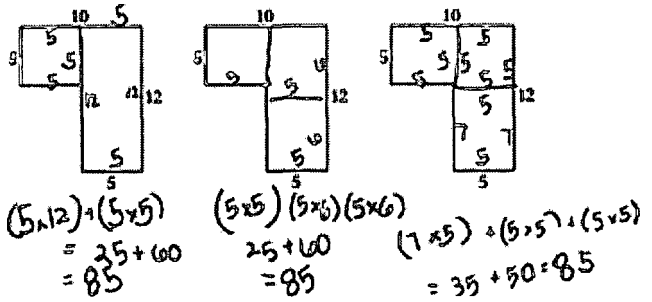
Use the figures below to show 3 other ways that Ted can divide the hallway to find its area. Below each figure explain what **numbers** and operations Ted could use to calculate the area.



	Percentage "Extended"			
Overall percentage "Extended"	Below *Basic* 261 or below[1]	At *Basic* 262–298[1]	At *Proficient* 299–332[1]	At *Advanced* 333 or above[1]
6	#	1	12	41

#The estimate rounds to zero.
[1]NAEP mathematics composite scale range.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Assessment.

Sample "Extended" Response



Mathematics Content Area:	Mathematics Ability:
Measurement	Problem Solving

Technical Notes

School and Student Samples

All 50 states and three jurisdictions participated and met the minimum guidelines for reporting their results in 2003. Approximately 190,000 fourth-graders from 7,500 schools and 153,000 eighth-graders from 6,100 schools were assessed in mathematics in 2003. The national samples were larger in 2003 than in previous assessment years because they were based on the combined sample of students assessed in each participating state, plus an additional sample from private schools. In 1990–2000 the national samples were drawn separately from the state samples and were smaller than the samples resulting from aggregating the state samples.

There has been a shift in the racial/ethnic composition of the student population and students participating in NAEP. The percentage of Hispanic students increased from 6 percent in 1990 to 18 percent in 2003 at grade 4, and from 7 percent to 15 percent at grade 8. The percentage of White students decreased from 75 percent in 1990 to 60 percent in 2003 at grade 4, and from 73 percent to 63 percent at grade 8. The percentage of Black students, which has changed less over the years, is approximately 17 percent at grade 4 and 16 percent at grade 8.

Prior to 2003, results in NAEP were reported for four NAEP-defined regions of the nation: Northeast, Southeast, Central, and West. To align NAEP with other federal data collections, beginning in 2003 NAEP analysis and reports have used U.S. Census Bureau definitions of "region." The four Censusdefined regions are: Northeast, South, Midwest and West. Figure A.1 shows how states are subdivided into these census regions (the two Department of Defense Educational Activities jurisdictions are not assigned to any region). As a result of this change in the region variable, the following section presents the results by region of the country for the 2003 assessment only.

Figure A.1 Map of regions of the country according to U.S. Census

SOURCE: US Department of Commerce Economics and Statistics Administration U.S. Census Bureau.

Additional Data Tables

National Results by Region of the Country

Table B.1 Average mathematics scale scores and achievement-level results, by region of the country, grades 4 and 8: 2003

				Percentage of students			
		Weighted percentage of students	Average scale score	Below Bask	At or above Bask	At or above *Proficient*	At Advanced
Grade 4							
	Northeast	18	238	19	81	37	5
	Midwest	23	238	20	80	36	5
	South	36	234	23	77	31	4
	West	24	231	28	72	28	3
Grade 8							
	Northeast	18	282	28	72	33	6
	Mldwest	23	283	26	74	33	6
	South	36	275	34	66	25	5
	West	23	273	37	63	26	5

SOURCE: U.S. Department of Education, Institute of Education Sciences. National Center for Education Statistics, National Assessment of Educational Progress (NAEP). 2003 Mathematics Assessment.

National Results by Type of School

Table B.2 Average mathematics scale scores and achievement-level results, by type of school, grades 4 and 8: 2003

				Percentage of students			
		Weighted percentage of students	Average scale score	Below Bask	At or above *Basic*	At or above *Proficient*	At Advanced
Grade 4							
	Public	90	234	24	76	31	4
	Nonpublic	10	244	12	88	44	6
	Catholic	5	244	12	88	43	5
	Other	5	245	13	87	45	7
Grade 8							
	Public	91	276	33	67	27	5
	Nonpublic	9	292	18	82	43	10
	Catholic	5	289	19	81	39	8
	Other	4	294	17	83	47	12

SOURCE: U.S. Department of Education. Institute of Education Sciences. National Center for Education Statistics. National Assessment of Educational Progress (NAEP). 2003 Mathematics Assessment.

State Subgroup Results

Table B.3 Average mathematics scale scores and achievement-level results, by gender, grade 4 public schools: By state, 2003

	Male				Female			
		Percentage of students				Percentage of students		
	Average scale scores	Below Basic	At or above *Basic*	At or above *Proficient*	Average scale scores	Below *Basic*	At or above *Basic*	At or above *Proficient*
Nation (public)	235	23	77	34	233	25	75	29
Alabama	223	35	65	19	223	36	64	18
Alaska	235	24	76	33	231	26	74	27
Arizona	231	28	72	28	227	32	68	23
Arkansas	228	30	70	27	230	27	73	25
California	229	31	69	28	225	35	65	22
Colorado	237	22	78	37	233	24	76	31
Connecticut	243	15	85	45	238	20	80	37
Delaware	237	20	80	34	235	19	81	29
Florida	235	24	76	33	233	25	75	29
Georgia	231	28	72	29	229	29	71	25
Hawaii	227	32	68	24	226	32	68	22
Idaho	237	19	81	34	233	22	78	27
Illinois	234	26	74	34	232	28	72	29
Indiana	239	17	83	37	237	18	82	34
Iowa	240	15	85	39	236	19	81	32
Kansas	244	14	86	44	240	17	83	39
Kentucky	230	26	74	24	227	30	70	20
Louisiana	227	33	67	22	226	33	67	20
Maine	239	16	84	37	236	19	81	31
Maryland	235	26	74	33	232	29	71	29
Massachusetts	244	14	86	44	239	18	82	38
Michigan	238	21	79	38	233	25	75	30
Minnesota	244	15	85	45	240	17	83	38
Mississippi	223	38	62	18	223	37	63	16
Missouri	235	22	78	30	235	20	80	29
Montana	236	19	81	33	235	19	81	29
Nebraska	238	19	81	36	235	22	78	31
Nevada	229	30	70	25	226	31	69	21
New Hampshire	246	11	89	46	240	15	85	39
New Jersey	240	19	81	41	237	20	80	36
New Mexico	224	36	64	21	221	39	61	14
New York	237	21	79	35	235	22	78	31
North Carolina	243	15	85	42	241	15	85	40
North Dakota	240	16	84	38	235	18	82	30
Ohio	239	19	81	37	237	19	81	34
Oklahoma	230	26	74	25	228	27	73	20
Oregon	237	20	80	35	235	22	78	31
Pennsylvania	238	21	79	39	234	23	77	32
Rhode Island	231	27	73	29	229	30	70	27
South Carolina	237	18	82	34	234	23	77	29
South Dakota	239	16	84	37	235	20	80	31
Tennessee	228	31	69	25	228	30	70	22
Texas	239	17	83	35	236	18	82	31
Utah	236	20	80	34	233	22	78	28
Vermont	244	14	86	44	240	17	83	39
Virginia	240	18	82	38	239	17	83	35
Washington	240	18	82	39	237	20	80	33
West Virginia	232	24	76	26	230	25	75	22
Wisconsin	238	20	80	38	235	21	79	32
Wyoming	242	12	88	41	240	14	86	36
Other jurisdictions								
District of Columbia	204	64	36	8	206	63	37	7
DDESS[1]	239	15	85	34	235	16	84	27
DoDDS[2]	239	14	86	34	236	18	82	29

[1] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[2] Department of Defense Dependents Schools (Overseas).
SOURCE: U.S. Department of Education, Institute of Education Sciences. National Center for Education Statistics, National Assessment of Educational Progress (NAEP). 2003 Mathematics Assessment.

Table B.4 Average mathematics scale scores and achievement-level results, by gender, grade 8 public schools: By state, 2003

	Male				Female			
		Percentage of students				Percentage of students		
	Average scale scores	Below Basic	At or above Basic	At or above Proficient	Average scale scores	Below Basic	At or above Basic	At or above Proficient
Nation (public)	277	33	67	29	275	34	66	26
Alabama	263	45	55	18	261	49	51	14
Alaska	280	29	71	32	278	31	69	28
Arizona	271	39	61	21	271	38	62	21
Arkansas	265	43	57	19	267	41	59	18
California	268	43	57	23	266	45	55	21
Colorado	284	26	74	35	283	26	74	34
Connecticut	285	27	73	37	283	27	73	33
Delaware	278	30	70	27	276	33	67	25
Florida	273	36	64	26	269	41	59	21
Georgia	270	40	60	24	269	41	59	20
Hawaii	265	44	56	17	266	45	55	16
Idaho	281	27	73	30	279	28	72	27
Illinois	278	33	67	31	276	34	66	28
Indiana	282	25	75	33	280	28	72	29
Iowa	285	23	77	35	283	24	76	31
Kansas	284	25	75	34	284	24	76	34
Kentucky	275	35	65	25	274	34	66	23
Louisiana	267	42	58	19	266	44	56	15
Maine	283	24	76	31	281	26	74	28
Maryland	279	32	68	33	276	34	66	27
Massachusetts	289	22	78	42	284	26	74	35
Michigan	277	33	67	30	276	32	68	26
Minnesota	289	20	80	43	292	16	84	44
Mississippi	262	51	49	14	260	55	45	11
Missouri	280	29	71	30	278	30	70	26
Montana	286	21	79	36	286	20	80	34
Nebraska	284	25	75	35	281	27	73	30
Nevada	268	41	59	21	268	41	59	19
New Hampshire	287	21	79	36	286	22	78	33
New Jersey	282	28	72	34	281	29	71	33
New Mexico	264	47	53	16	263	49	51	15
New York	281	29	71	33	279	30	70	31
North Carolina	281	29	71	32	282	28	72	32
North Dakota	287	19	81	37	287	19	81	36
Ohio	283	25	75	32	281	27	73	29
Oklahoma	272	36	64	22	272	35	65	18
Oregon	282	29	71	33	280	30	70	30
Pennsylvania	280	30	70	33	277	32	68	27
Rhode Island	273	37	63	26	271	38	62	22
South Carolina	280	30	70	29	274	35	65	23
South Dakota	286	21	79	35	284	23	77	34
Tennessee	268	42	58	22	268	41	59	20
Texas	278	31	69	27	276	32	68	23
Utah	282	28	72	33	280	28	72	29
Vermont	286	23	77	35	286	22	78	35
Virginia	283	26	74	33	280	29	71	30
Washington	282	28	72	33	281	29	71	31
West Virginia	271	38	62	21	271	37	63	18
Wisconsin	284	25	75	36	284	24	76	34
Wyoming	284	24	76	34	283	22	78	30
Other jurisdictions								
District of Columbia	242	71	29	7	244	71	29	5
DDESS[1]	284	21	79	31	280	23	77	22
DoDDS[2]	287	20	80	37	284	22	78	32

[1]Department of Defense Domestic Dependent Elementary and Secondary Schools.
[2]Department of Defense Dependents Schools (Overseas).
SOURCE: U.S. Department of Education, Institute of Education Sciences. National Center for Education Statistics, National Assessment of Educational Progress (NAEP). 2003 Mathematics Assessment.

Table B.5 Average mathematics scale scores and achievement-level results, by race/ethnicity, grade 4 public schools: By state, 2003

	White					Black					Hispanic				
			Percentage of students					Percentage of students					Percentage of students		
	Weighted percentage of students	Average scale scores	Below Basic	At or above Basic	At or above Proficient	Weighted percentage of students	Average scale scores	Below Basic	At or above Basic	At or above Proficient	Weighted percentage of students	Average scale scores	Below Basic	At or above Basic	At or above Proficient
Nation (public)	58	243	13	87	42	17	216	46	54	10	19	221	38	62	15
Alabama	61	232	22	78	27	36	208	59	41	5	1	‡	‡	‡	‡
Alaska	56	242	14	86	41	5	221	36	64	15	5	228	32	68	24
Arizona	50	241	15	85	39	4	215	48	52	11	38	217	44	56	11
Arkansas	69	237	17	83	34	25	206	61	39	5	4	221	38	62	15
California	32	243	14	86	42	7	213	49	51	9	49	216	47	53	11
Colorado	65	243	12	88	44	5	217	46	54	12	25	217	46	54	13
Connecticut	67	250	8	92	53	14	217	45	55	10	15	223	36	64	15
Delaware	56	244	9	91	43	33	223	34	66	12	7	226	31	69	17
Florida	50	243	13	87	43	25	215	48	52	8	21	232	26	74	27
Georgia	50	241	16	84	40	39	217	44	56	11	7	219	40	60	13
Hawaii	16	238	18	82	35	3	221	36	64	16	3	219	45	55	17
Idaho	83	238	16	84	34	1	‡	‡	‡	‡	13	217	45	55	11
Illinois	59	244	13	87	44	20	210	56	44	7	18	218	45	55	13
Indiana	80	242	13	87	40	12	215	46	54	7	4	226	31	69	18
Iowa	87	241	14	86	39	5	215	50	50	9	5	222	38	62	14
Kansas	78	246	10	90	47	11	217	45	55	13	8	230	22	78	19
Kentucky	85	231	25	75	24	12	214	47	53	8	1	‡	‡	‡	‡
Louisiana	44	242	12	88	39	53	213	51	49	6	1	‡	‡	‡	‡
Maine	97	238	17	83	34	1	‡	‡	‡	‡	1	‡	‡	‡	‡
Maryland	51	244	15	85	44	37	216	47	53	11	6	227	32	68	21
Massachusetts	73	247	9	91	49	11	222	38	62	13	12	222	37	63	13
Michigan	70	244	12	88	43	21	209	58	42	7	4	223	39	61	17
Minnesota	81	246	11	89	47	8	219	46	54	16	4	220	40	60	14
Mississippi	44	236	17	83	30	55	212	54	46	6	1	‡	‡	‡	‡
Missouri	77	240	14	86	35	18	216	47	53	9	3	220	43	57	14
Montana	86	238	16	84	34	1	‡	‡	‡	‡	2	236	17	83	25
Nebraska	80	241	13	87	39	7	211	56	44	7	9	213	49	51	9
Nevada	53	236	19	81	32	10	215	48	52	10	30	216	47	53	10
New Hampshire	94	244	12	88	43	2	‡	‡	‡	‡	3	225	35	65	19
New Jersey	58	248	10	90	51	18	217	45	55	11	16	224	33	67	18
New Mexico	31	237	18	82	33	3	216	44	56	10	53	217	45	55	10
New York	54	246	9	91	45	19	219	42	58	12	20	221	38	62	15
North Carolina	58	251	6	94	55	30	225	32	68	14	6	235	21	79	30
North Dakota	88	240	13	87	37	1	‡	‡	‡	‡	1	‡	‡	‡	‡
Ohio	77	243	13	87	42	19	217	46	54	10	2	225	34	66	16
Oklahoma	59	235	18	82	29	12	211	53	47	6	7	220	39	61	11
Oregon	75	240	16	84	36	3	223	39	61	20	14	218	46	54	15
Pennsylvania	74	243	13	87	44	20	212	52	48	8	5	216	48	52	12
Rhode Island	70	239	17	83	37	9	210	55	45	7	16	207	58	42	6
South Carolina	55	246	10	90	46	40	222	35	65	13	3	232	22	78	26
South Dakota	84	241	13	87	38	1	‡	‡	‡	‡	2	223	37	63	20
Tennessee	71	235	20	80	30	26	208	59	41	6	2	218	43	57	14
Texas	40	248	8	92	49	13	226	29	71	15	44	230	24	76	21
Utah	82	238	16	84	35	1	‡	‡	‡	‡	11	216	48	52	11
Vermont	95	242	15	85	42	2	‡	‡	‡	‡	1	‡	‡	‡	‡
Virginia	62	246	10	90	46	26	223	34	66	13	7	230	25	75	20
Washington	71	242	14	86	40	6	222	38	62	17	12	223	39	61	18
West Virginia	95	231	24	76	24	4	221	38	62	13	1	‡	‡	‡	‡
Wisconsin	76	243	12	88	43	12	209	59	41	8	8	221	37	63	13
Wyoming	86	243	11	89	42	1	‡	‡	‡	‡	8	229	24	76	20
Other jurisdictions															
District of Columbia	4	262	3	97	71	87	202	67	33	4	8	205	61	39	7
DDESS[1]	47	243	9	91	40	25	225	29	71	13	19	236	15	85	27
DoDDS[2]	48	241	12	88	38	22	227	25	75	15	11	233	21	79	25

See notes at end of table. ▶

Table B.5 Average mathematics scale scores and achievement-level results, by race/ethnicity, grade 4 public schools: By state, 2003–Continued

	Asian/Pacific Islander					American Indian/Alaska Native				
			Percentage of students					Percentage of students		
	Weighted percentage of students	Average scale scores	Below *Basic*	At or above *Basic*	At or above *Proficient*	Weighted percentage of students	Average scale scores	Below *Basic*	At or above *Basic*	At or above *Proficient*
Nation (public)	4	246	13	87	48	1	224	35	65	19
Alabama	1	‡	‡	‡	‡	1	‡	‡	‡	‡
Alaska	7	230	27	73	27	26	218	46	54	13
Arizona	2	244	11	89	41	6	210	56	44	8
Arkansas	1	‡	‡	‡	‡	#	‡	‡	‡	‡
California	11	246	13	87	49	#	‡	‡	‡	‡
Colorado	3	242	19	81	44	1	‡	‡	‡	‡
Connecticut	3	249	8	92	52	#	‡	‡	‡	‡
Delaware	3	250	13	87	59	#	‡	‡	‡	‡
florida	2	249	10	90	53	#	‡	‡	‡	‡
Georgia	2	248	13	87	53	#	‡	‡	‡	‡
Hawaii	67	225	34	66	21	1	‡	‡	‡	‡
Idaho	1	‡	‡	‡	‡	1	‡	‡	‡	‡
Illinois	2	252	8	92	58	#	‡	‡	‡	‡
Indiana	1	‡	‡	‡	‡	#	‡	‡	‡	‡
Iowa	2	‡	‡	‡	‡	1	‡	‡	‡	‡
Kansas	2	‡	‡	‡	‡	1	‡	‡	‡	‡
Kentucky	1	‡	‡	‡	‡	#	‡	‡	‡	‡
Louisiana	1	‡	‡	‡	‡	1	‡	‡	‡	‡
Maine	1	‡	‡	‡	‡	#	‡	‡	‡	‡
Maryland	6	254	10	90	58	#	‡	‡		‡
Massachusetts	4	248	11	89	49	#	‡	‡	‡	‡
Michigan	2	248	14	86	47	1	‡	‡	‡	‡
Minnesota	5	229	32	68	27	2	‡	‡	‡	‡
Mississippi	1	‡	‡	‡	‡	‡	‡	‡	‡	‡
Missouri	1	‡	‡	‡	‡	#	‡	‡	‡	‡
Montana	1	‡		‡		10	217	45	55	11
Nebraska	1	‡	‡	‡	‡	2	219	39	61	11
Nevada	5	237	18	82	34	2	215	45	55	10
New Hampshire	1	‡	‡	‡	‡	#	‡	‡	‡	‡
New Jersey	7	256	5	95	61	1	‡	‡	‡	‡
New Mexico	1				‡	11	210	55	45	7
New York	6	250	9	91	51	1	‡	‡	‡	‡
North Carolina	2	255	7	93	60	1	‡	‡	‡	‡
North Dakota	1	‡	‡	‡	‡	8	215	48	52	9
Ohio	1	‡	‡	‡	‡	#	‡	‡	‡	‡
Oklahoma	2	247	9	91	45	18	225	32	68	16
Oregon	4	245	12	88	46	2	‡	‡	‡	‡
Pennsylvania	2	‡	‡	‡	‡	#	‡	‡	‡	‡
Rhode Island	4	225	37	63	22	1	‡	‡	‡	‡
South Carolina	1	‡	‡	‡	‡	#	‡	‡	‡	‡
South Dakota	1		‡	‡	‡	12	217	46	54	9
Tennessee	1	‡	‡	‡	‡	#	‡	‡	‡	‡
Texas	3	258	2	98	62	#	‡	‡	‡	‡
Utah	4	224	34	66	16	1	‡	‡	‡	‡
Vermont	2	‡	‡	‡	‡	#	‡	‡	‡	‡
Virginia	5	255	6	94	60	#	‡	‡	‡	‡
Washington	7	244	15	85	44	3	229	31	69	24
West Virginia	#	‡	‡	‡	‡	1	‡	‡	‡	‡
Wisconsin	3	230	28	72	26	2	224	41	59	17
Wyoming	1	‡	‡	‡	‡	3	221	37	63	16
Other jurisdictions										
District of Columbia	1	‡	‡	‡	‡	#	‡	‡	‡	‡
DDESS[1]	3	‡	‡	‡	‡	1			‡	‡
DoDDS[2]	10	240	14	86	38	1	‡	‡	‡	‡

#The estimate rounds to zero.
‡Reporting standards not met. Sample size is insufficient to permit a reliable estimate.
[1]Department of Defense Domestic Dependent Elementary and Secondary Schools.
[2]Department of Defense Dependents Schools (Overseas).
NOTE: Results are not shown for students whose race based on school records was "other" or, if school data were missing, who self-reported their race as "multiracial" but not "Hispanic," or did not self-report racial/ethnic information.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Assessment.

Table B.6 Average mathematics scale scores and achievement-level results, by race/ethnicity, grade 8 public schools: By state, 2003

	White					Black					Hispanic				
			Percentage of students					Percentage of students					Percentage of students		
	Weighted percentage of students	Average scale scores	Below Basic	At or above Basic	At or above Proficient	Weighted percentage of students	Average scale scores	Below Basic	At or above Basic	At or above Proficient	Weighted percentage of students	Average scale scores	Below Bask	At or above Basic	At or above Proficient
Nation (public)	62	287	21	79	36	17	252	61	39	7	15	258	53	47	11
Alabama	62	274	32	68	23	36	240	73	27	3	1	‡	‡	‡	‡
Alaska	58	290	19	81	41	5	263	44	56	11	3	263	49	51	11
Arizona	50	284	22	78	32	4	256	55	45	7	37	258	55	45	9
Arkansas	72	275	31	69	24	24	239	74	26	3	3	248	63	37	7
California	37	283	26	74	34	9	246	65	35	6	39	250	63	37	8
Colorado	70	292	16	84	43	5	255	60	40	9	21	259	52	48	12
Connecticut	71	293	17	83	44	13	255	58	42	7	12	259	52	48	11
Delaware	60	287	19	81	35	31	260	52	48	8	6	257	53	47	11
Florida	50	286	22	78	34	27	249	64	36	7	19	264	47	53	16
Georgia	53	284	23	77	32	39	250	64	36	7	4	262	51	49	14
Hawaii	15	273	36	64	25	2	‡	‡	‡	‡	3	263	52	48	16
Idaho	85	284	23	77	31	1	‡	‡	‡	‡	11	251	61	39	7
Illinois	62	289	20	80	40	20	249	66	34	6	15	259	52	48	9
Indiana	82	286	21	79	35	12	251	60	40	7	3	261	51	49	9
Iowa	90	287	20	80	35	4	257	58	42	11	4	255	56	44	10
Kansas	79	290	17	83	39	9	252	65	35	8	9	263	51	49	16
Kentucky	88	277	32	68	25	9	250	62	38	5	1	‡	‡	‡	‡
Louisiana	51	281	25	75	28	46	250	64	36	5	2	‡	‡	‡	‡
Maine	97	282	25	75	30	1	‡	‡	‡	‡	1	‡	‡	‡	‡
Maryland	58	289	21	79	40	31	256	56	44	9	6	262	51	49	15
Massachusetts	77	292	17	83	44	8	260	52	48	10	10	255	59	41	9
Michigan	70	286	21	79	35	22	245	68	32	4	3	267	43	57	14
Minnesota	83	295	13	87	49	6	251	57	43	9	3	262	52	48	16
Mississippi	49	275	33	67	22	48	246	73	27	3	1	‡	‡	‡	‡
Missouri	82	284	23	77	32	15	250	65	35	6	2	‡	‡	‡	‡
Montana	87	289	17	83	37	1	‡	‡	‡	‡	2	‡	‡	‡	‡
Nebraska	84	287	20	80	36	5	247	65	35	7	7	255	60	40	10
Nevada	57	278	29	71	27	9	248	65	35	9	25	250	63	37	7
New Hampshire	95	287	20	80	35	1	‡	‡	‡	‡	2	‡	‡	‡	‡
New Jersey	61	292	16	84	42	18	253	59	41	7	14	262	50	50	14
New Mexico	34	282	24	76	31	3	254	60	40	5	51	254	59	41	7
New York	56	293	14	86	44	20	255	57	43	10	17	262	50	50	16
North Carolina	59	294	15	85	44	30	260	51	49	11	5	263	45	55	16
North Dakota	90	290	15	85	39	1	‡	‡	‡	‡	1	‡	‡	‡	‡
Ohio	79	287	20	80	35	17	257	55	45	8	2	270	42	58	18
Oklahoma	63	278	27	73	25	10	249	63	37	5	6	258	53	47	9
Oregon	79	284	25	75	35	3	265	47	53	17	10	258	58	42	12
Pennsylvania	80	285	24	76	35	15	247	68	32	4	3	253	58	42	6
Rhode Island	76	280	28	72	29	7	244	71	29	5	13	245	71	29	5
South Carolina	56	291	16	84	39	40	258	54	46	8	2	‡	‡	‡	‡
South Dakota	89	288	18	82	37	1	‡	‡	‡	‡	1	‡	‡	‡	‡
Tennessee	74	277	31	69	26	23	242	72	28	5	2	‡	‡	‡	‡
Texas	44	290	16	84	38	16	260	53	47	8	38	267	42	58	14
Utah	86	285	23	77	34	1	‡	‡	‡	‡	9	249	65	35	7
Vermont	97	286	22	78	35	1	‡	‡	‡	‡	#	‡	‡	‡	‡
Virginia	64	290	18	82	40	27	262	51	49	11	5	268	41	59	17
Washington	75	285	24	76	36	5	262	46	54	13	9	263	50	50	17
West Virginia	96	271	37	63	20	4	253	61	39	6	#	‡	‡	‡	‡
Wisconsin	84	290	18	82	40	8	241	76	24	5	4	262	50	50	16
Wyoming	89	286	20	80	35	1	‡	‡	‡	‡	7	265	46	54	13
Other jurisdictions															
District of Columbia	3	‡	‡	‡	‡	87	240	74	26	3	9	246	67	33	3
DDESS[1]	39	294	10	90	42	22	268	39	61	10	27	276	28	72	19
DoDDS[2]	48	292	14	86	42	21	270	37	63	15	10	280	28	72	29

See notes at end of table. ▶

Table B.6 Average mathematics scale scores and achievement-level results, by race/ethnicity, grade 8 public schools: By state, 2003—Continued

	Asian/Pacific Islander					American Indian/Alaska Native				
			Percentage of students					Percentage of students		
	Weighted percentage of students	Average scale scores	Below *Basic*	At or above *Basic*	At or above *Proficient*	Weighted percentage of students	Average scale scores	Below *Basic*	At or above *Basic*	At or above *Proficient*
Nation (public)	4	289	23	77	42	1	265	46	54	16
Alabama	1	‡	‡	‡	‡	#	‡	‡	‡	‡
Alaska	7	280	30	70	29	25	259	51	49	12
Arizona	2	‡	‡	‡	‡	7	254	61	39	7
Arkansas	1	‡	‡	‡	‡	#	‡	‡	‡	‡
California	13	287	26	74	39	1	‡	‡		‡
Colorado	4	290	20	80	38	1	‡	‡		‡
Connecticut	3	296	21	79	51	#	‡	‡		‡
Delaware	2	‡	‡	‡	‡	#	‡	‡		‡
Florida	2	287	25	75	41	#	‡	‡	‡	‡
Georgia	3	286	27	73	40	#	‡	‡	‡	‡
Hawaii	69	265	46	54	15	#	‡	‡	‡	‡
Idaho	1	‡	‡	‡	‡	1	‡	‡	‡	‡
Illinois	3	302	11	89	58	#	‡	‡	‡	‡
Indiana	1	‡	‡	‡	‡	#	‡	‡	‡	‡
Iowa	1	‡	‡	‡	‡	#	‡	‡	‡	‡
Kansas	2	284	21	79	34	1	‡	‡	‡	‡
Kentucky	1	‡	‡	‡	‡	#			‡	‡
Louisiana	1	‡	‡	‡	‡	#	‡	‡	‡	‡
Maine	1	‡	‡	‡	‡	#	‡	‡	‡	‡
Maryland	5	302	10	90	56	#	‡	‡	‡	‡
Massachusetts	4	304	12	88	57	#	‡	‡	‡	‡
Michigan	2	‡	‡	‡	‡	2	‡	‡	‡	‡
Minnesota	5	284	25	75	32	2	‡	‡	‡	‡
Mississippi	1	‡	‡	‡	‡	#	‡	‡		‡
Missouri	1	‡	‡	‡	‡	#	‡	‡	‡	‡
Montana	1	‡	‡	‡	‡	9	260	52	48	15
Nebraska	2	‡	‡	‡	‡	2			‡	‡
Nevada	7	280	27	73	31	1	‡	‡	‡	‡
New Hampshire	1	‡	‡	‡	‡	#	‡	‡	‡	‡
New Jersey	6	306	10	90	61	#	‡	‡	‡	‡
New Mexico	1	‡	‡		‡	10	245	70	30	3
New York	6	290	21	79	41	1	‡	‡	‡	‡
North Carolina	2	297	13	87	48	2	259	52	48	13
North Dakota	1	‡	‡	‡	‡	7	261	50	50	11
Ohio	1	‡	‡	‡	‡	#	‡	‡	‡	‡
Oklahoma	1			‡	‡	17	265	44	56	14
Oregon	4	292	22	78	41	2	263	50	50	14
Pennsylvania	2	‡	‡	‡	‡	#	‡	‡	‡	‡
Rhode Island	3	265	46	54	20	#	‡	‡	‡	‡
South Carolina	1	‡	‡	‡	‡	#	‡	‡	‡	‡
South Dakota	1	‡	‡	‡	‡	8	255	57	43	9
Tennessee	1	‡	‡	‡	‡	#	‡	‡	‡	‡
Texas	3	303	9	91	58	#	‡	‡	‡	‡
Utah	3	275	34	66	25	1	‡	‡	‡	‡
Vermont	1	‡	‡	‡	‡	1	‡	‡	‡	‡
Virginia	4	297	14	86	48	#	‡	‡	‡	‡
Washington	8	285	28	72	37	2	264	44	56	17
West Virginia	‡	‡	‡	‡	‡	#	‡	‡	‡	‡
Wisconsin	4	273	33	67	17	1	‡	‡	‡	‡
Wyoming	1	‡	‡	‡	‡	3	261	52	48	14
Other jurisdictions										
District of Columbia	1	‡	‡	‡	‡	#	‡	‡	‡	‡
DDESS[1]	7	‡	‡	‡	‡	1	‡	‡	‡	‡
DoDDS[2]	11	288	18	82	38	1	‡	‡	‡	‡

#The estimate rounds to am.
‡Reporting standards not met. Sample she is insufficient to permit a reliable estimate.
[1]Department of Defense Domestic Dependent Elementary and Secondary Schools.
[2]Department of Defense Dependents Schools (Overseas).
NOTE: Results are not shown lor students whose race based on school records was'other'or, if school data were missing, who self-reported their race as "multiracial" but not'Hispanic: or did not self-report racial/ethnic information.
SOURCE: U.S. Department of Education, Institute of Education Sciences. National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Assessment.

Table B.7 Average mathematics scale scores and achievement-level results, by eligibility for free/reduced-price school lunch, grade 4 public schools: By state, 2003

	Eligible					Not eligible				
			Percentage of students					Percentage of students		
	Weighted percentage of students	Average scale scores	Below Basic	At or above Basic	At or above Proficient	Weighted percentage of students	Average scale scores	Below Basic	At or above Basic	At or above Proficient
Nation (public)	44	222	38	62	15	52	244	12	88	45
Alabama	57	213	50	50	8	43	237	16	84	33
Alaska	33	220	41	59	14	59	241	16	84	39
Arizona	47	217	45	55	12	42	241	14	86	39
Arkansas	54	221	39	61	18	43	239	16	84	37
California	52	216	46	54	11	44	241	17	83	41
Colorado	31	219	42	58	14	68	243	14	86	43
Connecticut	30	220	40	60	12	66	250	8	92	54
Delaware	38	225	31	69	16	53	243	12	88	42
florida	49	222	37	63	16	48	245	12	88	46
Georgia	48	219	41	59	12	46	241	16	84	40
Hawaii	49	216	46	54	11	51	237	18	82	34
Idaho	43	227	31	69	20	50	241	13	87	38
Illinois	41	216	48	52	11	55	246	11	89	48
Indiana	34	225	31	69	17	65	245	10	90	45
Iowa	33	227	30	70	20	66	244	11	89	43
Kansas	40	231	25	75	24	59	249	9	91	53
Kentucky	51	220	38	62	12	47	237	17	83	32
Louisiana	65	220	41	59	13	31	242	15	85	41
Maine	34	228	29	71	21	64	243	11	89	41
Maryland	36	216	48	52	10	60	244	15	85	44
Massachusetts	29	226	31	69	17	63	249	9	91	52
Michigan	36	220	41	59	15	63	245	12	88	45
Minnesota	27	226	33	67	20	73	248	10	90	50
Mississippi	69	216	47	53	9	26	238	16	84	34
Missouri	42	224	32	68	15	53	243	12	88	41
Montana	38	227	29	71	20	57	242	11	89	39
Nebraska	36	222	37	63	17	59	244	10	90	44
Nevada	42	216	47	53	11	52	237	18	82	33
New Hampshire	17	229	28	72	24	73	247	9	91	48
New Jersey	29	221	40	60	15	63	247	11	89	49
New Mexico	65	217	45	55	11	25	236	19	81	31
New York	50	225	34	66	18	46	247	9	91	48
North Carolina	42	229	27	73	21	52	252	6	94	55
North Dakota	31	228	28	72	21	67	242	12	88	40
Ohio	35	224	36	64	17	56	246	9	91	47
Oklahoma	57	223	35	65	14	41	239	14	86	34
Oregon	36	226	32	68	19	61	242	15	85	40
Pennsylvania	37	220	40	60	16	60	246	12	88	48
Rhode Island	40	217	45	55	13	52	242	14	86	41
South Carolina	53	226	31	69	18	46	247	9	91	48
South Dakota	37	227	30	70	21	62	244	10	90	42
Tennessee	40	216	46	54	11	55	236	20	80	32
Texas	54	229	25	75	20	44	247	9	91	48
Utah	34	225	33	67	20	65	240	15	85	37
Vermont	29	229	29	71	23	69	248	9	91	50
Virginia	32	225	32	68	14	66	246	10	90	46
Washington	38	226	32	68	20	52	247	10	90	48
West Virginia	53	225	32	68	16	45	237	17	83	33
Wisconsin	32	221	39	61	17	65	244	12	88	44
Wyoming	35	233	20	80	25	63	246	8	92	47
Other jurisdictions										
District of Columbia		200	71	29	3	24	221	43	57	20
DDESS[1]	–	233	20	80	24	53	240	13	87	35
DoDDS[2]	–	–	–	–	–	–	–	–	–	–

–Not available.
[1]Department of Defense Domestic Dependent Elementary and Secondary Schools.
[2]Department of Defense Dependents Schools (Overseas).
NOTE: Results are not shown for students whose eligibility status was not available.
SOURCE: U.S. Department of Education, Institute of Education Sciences. National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Assessment.

Table B.8 Average mathematics scale scores and achievement-level results, by eligibility for free/reduced-price school lunch, grade 8 public schools: By state, 2003

	Eligible					Not eligible				
			Percentage of students					Percentage of students		
	Weighted percentage of students	Average scale scores	Below *Basic*	At or abwe *Basic*	At or above *Proficient*	Weighted percentage of students	Average scale scores	Below *Basic*	At or above *Basic*	At or above *Proficient*
Nation (public)	36	258	53	47	11	58	287	22	78	37
Alabama	47	246	65	35	7	53	276	32	68	24
Alaska	24	260	49	51	13	67	285	24	76	36
Arizona	41	258	55	45	9	47	282	25	75	31
Arkansas	46	256	53	47	12	49	276	30	70	25
California	41	251	62	38	9	46	280	30	70	32
Colorado	26	262	50	50	13	72	292	17	83	43
Connecticut	26	260	50	50	12	71	292	18	82	44
Delaware	33	261	50	50	10	58	285	23	77	32
florida	43	256	55	45	11	52	284	25	75	34
Georgia	43	253	61	39	8	52	284	23	77	34
Hawaii	43	254	58	42	8	56	275	34	66	24
Idaho	35	267	40	60	17	56	287	20	80	35
Illinois	37	256	57	43	10	60	290	19	81	41
Indiana	29	266	42	58	16	67	288	20	80	37
Iowa	25	266	43	57	15	72	290	17	83	39
Kansas	32	270	39	61	19	66	291	17	83	41
Kentucky	42	261	49	51	11	55	284	24	76	33
Louisiana	50	256	55	45	8	38	280	28	72	29
Maine	28	268	40	60	16	70	287	19	81	35
Maryland	26	255	58	42	10	67	285	25	75	36
Massachusetts	23	261	51	49	13	65	295	15	85	46
Michigan	26	257	53	47	13	66	285	23	77	34
Minnesota	22	271	36	64	24	77	297	13	87	50
Mississippi	57	251	67	33	5	39	275	34	66	23
Missouri	31	263	47	53	13	66	286	21	79	35
Montana	30	273	35	65	23	65	292	15	85	40
Nebraska	28	265	45	55	15	68	290	17	83	40
Nevada	32	254	57	43	10	64	274	33	67	25
New Hampshire	13	268	42	58	16	79	289	18	82	38
New Jersey	24	256	56	44	10	68	290	19	81	41
New Mexico	51	252	61	39	7	40	275	33	67	23
New York	44	262	48	52	16	51	293	15	85	45
North Carolina	37	263	47	53	14	51	291	18	82	42
North Dakota	27	274	33	67	23	73	292	13	87	41
Ohio	23	263	46	54	11	65	289	19	81	38
Oklahoma	44	260	50	50	10	54	282	24	76	28
Oregon	26	266	45	55	17	68	286	24	76	37
Pennsylvania	28	257	55	45	10	69	288	21	79	38
Rhode Island	29	253	59	41	8	63	284	23	77	33
South Carolina	45	263	49	51	12	53	289	19	81	38
South Dakota	32	272	37	63	22	68	291	15	85	41
Tennessee	37	250	61	39	9	60	279	30	70	28
Texas	45	264	46	54	12	53	288	19	81	36
Utah	27	266	44	56	18	70	286	22	78	36
Vermont	25	268	41	59	16	75	291	16	84	41
Virginia	25	261	51	49	11	71	289	19	81	38
Washington	27	265	44	56	16	59	288	21	79	40
West Virginia	47	261	49	51	10	53	280	27	73	28
Wisconsin	22	259	52	48	12	68	292	16	84	43
Wyoming	27	271	38	62	18	72	288	18	82	37
Other jurisdictions										
District of Columbia	57	235	79	21	2	31	254	60	40	12
DDESS[1]	24	281	24	76	25	57	283	21	79	27
DoDDS[2]	–	–	–	–	–	–	–	–	–	–

–Not available.
[1]Department of Defense Domestic Dependent Elementary and Secondary Schools.
[2]Department of Defense Dependents Schools (Overseas).
NOTE: Results are not shown for students whose eligibility status was not available.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1003 Mathematics Assessment.

Table B.9 Average mathematics scale scores and achievement-level results, by student-reported parents' highest level of education, grade 8 public schools: By state, 2003

	Less than high school					Graduated high school				
			Percentage of students					Percentage of students		
	Weighted percentage of students	Average scale scores	Below *Basic*	At or above *Basic*	At or above *Proficient*	Weighted percentage of students	Average scale scores	Below *Basic*	At or above *Basic*	At or above *Proficient*
Nation (public)	7	256	56	44	9	18	267	42	58	16
Alabama	9	249	61	39	5	22	253	59	41	9
Alaska	‡	‡	†	‡	‡	‡	‡	‡	‡	‡
Ariona	10	257	55	45	7	17	266	45	55	16
Arkansas	8	253	53	47	9	23	259	49	51	12
California	10	246	68	32	6	13	255	57	43	9
Colorado	6	254	58	42	7	13	270	41	59	19
Connecticut	5	259	48	52	12	16	273	35	65	20
Delaware	5	258	53	47	9	22	271	37	63	17
Florida	7	255	57	43	9	18	264	46	54	16
Georgia	9	254	60	40	7	20	259	52	48	11
Hawaii	4	255	57	43	8	18	256	56	44	8
Idaho	7	260	50	50	10	16	269	39	61	18
Illinois	6	256	60	40	8	17	269	40	60	19
Indiana	7	265	44	56	13	23	274	31	69	21
Iowa	4	255	55	45	4	20	272	36	64	17
Kansas	6	260	54	46	11	16	275	33	67	23
Kentucky	8	258	56	44	9	23	266	43	57	14
Louisiana	7	256	57	43	8	24	262	49	51	12
Maine	4	255	58	42	6	20	272	35	65	19
Maryland	5	259	52	48	7	17	265	45	55	17
Massachusetts	5	262	53	47	13	14	271	38	62	20
Michigan	4	253	57	43	8	19	268	41	59	16
Minnesota	3	262	46	54	15	14	279	28	72	28
Mississippi	7	253	65	35	5	25	253	63	37	6
Missouri	6	265	46	54	11	19	271	37	63	18
Montana	4	263	44	56	14	17	277	30	70	25
Nebraska	5	253	62	38	10	17	273	35	65	20
Nevada	10	249	64	36	8	20	263	46	54	14
New Hampshire	4	260	52	48	6	15	276	30	70	19
New Jersey	3	260	50	50	9	16	269	39	61	17
New Mexico	11	246	68	32	4	22	254	60	40	6
New York	5	259	52	48	13	15	270	38	62	22
North Carolina	7	264	45	55	14	19	270	40	60	21
North Dakota	2	257	57	43	11	16	278	26	74	22
Ohio	5	260	51	49	8	24	276	29	71	20
Oklahoma	8	254	57	43	4	19	262	46	54	11
Oregon	7	261	51	49	12	15	271	39	61	19
Pennsylvania	4	252	59	41	7	23	269	40	60	19
Rhode Island	6	249	65	35	7	13	264	45	55	12
South Carolina	6	269	43	57	17	23	267	41	59	14
South Dakota	4	267	42	58	16	18	277	31	69	25
Tennessee	9	253	59	41	9	24	258	52	48	12
Texas	13	265	46	54	11	19	271	37	63	18
Utah	5	253	61	39	9	13	265	44	56	12
Vermont	4	262	54	46	17	19	276	31	69	21
Virginia	6	262	52	48	11	18	271	37	63	18
Washington	7	263	45	55	10	15	271	36	64	20
West Virginia	9	255	58	42	7	25	266	43	57	14
Wisconsin	4	255	55	45	8	21	276	30	70	23
Wyoming	5	269	38	62	17	18	277	30	70	25
Other jurisdictions										
District of Columbia	7	236	75	25	2	23	235	81	19	1
DDESS[1]	2	‡	‡	‡	‡	13	273	30	70	15
DoDDS[2]	1	†	‡	‡	‡	10	277	33	67	24

See notes at end of table. ▷

Table B.9 Average mathematics scale scores and achievement-level results, by student-reported parents' highest level of education, grade 8 public schools: By state, 2003--Continued

	Some education after high school					Graduated college				
			Percentage of students					Percentage of students		
	Weighted percentage of students	Average scale scores	Below *Basic*	At or above *Basic*	At or above *Proficient*	Weighted percentage of students	Average scale scores	Below *Basic*	At or above *Basic*	At or above *Proficient*
Nation (public)	18	280	27	73	28	45	287	23	77	39
Alabama	18	267	39	61	15	44	270	38	62	23
Alaska	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Arizona	18	277	30	70	22	38	284	25	75	33
Arkansas	19	275	31	69	22	39	274	35	65	25
California	18	275	33	67	25	40	282	30	70	35
Colorado	17	282	25	75	28	55	295	14	86	47
Connecticut	16	280	28	72	27	53	295	17	83	48
Delaware	20	278	27	73	23	45	286	25	75	35
Florida	18	280	27	73	28	43	280	30	70	31
Georgia	18	277	31	69	25	45	280	30	70	31
Hawaii	20	270	37	63	17	43	273	37	63	24
Idaho	18	283	21	79	27	47	291	17	83	40
Illinois	17	278	30	70	27	48	288	23	77	41
Indiana	20	284	21	79	31	42	290	20	80	43
Iowa	17	288	17	83	34	52	294	14	86	46
Kansas	18	287	18	82	33	49	294	15	85	46
Kentucky	21	278	28	72	23	39	286	24	76	37
Louisiana	20	274	33	67	21	38	271	38	62	23
Maine	19	281	23	77	26	50	291	16	84	39
Maryland	17	281	26	74	27	51	288	24	76	41
Massachusetts	14	281	26	74	29	57	298	13	87	51
Michigan	20	280	27	73	29	47	284	25	75	36
Minnesota	17	295	13	87	46	57	298	12	88	53
Mississippi	16	268	44	56	17	45	266	47	53	16
Missouri	22	281	24	76	28	43	287	22	78	39
Montana	19	288	17	83	35	52	292	15	85	42
Nebraska	16	283	23	77	32	52	292	16	84	42
Nevada	19	277	30	70	24	39	279	29	71	30
New Hampshire	16	287	19	81	36	55	295	13	87	45
New Jersey	16	280	28	72	27	55	292	19	81	45
New Mexico	20	268	40	60	14	35	277	31	69	28
New York	14	282	22	78	30	54	289	21	79	42
North Carolina	21	283	24	76	31	44	291	20	80	44
North Dakota	16	290	15	85	37	59	293	14	86	44
Ohio	20	281	25	75	29	43	291	18	82	43
Oklahoma	21	275	31	69	20	43	282	24	76	30
Oregon	20	283	24	76	29	46	293	19	81	45
Pennsylvania	18	280	29	71	30	45	289	21	79	42
Rhode Island	16	271	37	63	20	48	284	24	76	35
South Carolina	16	283	22	78	28	46	284	27	73	35
South Oakota	19	285	20	80	33	51	293	13	87	44
Tennessee	19	274	34	66	24	40	280	30	70	31
Texas	17	282	24	76	28	39	286	22	78	36
Utah	16	281	27	73	28	55	292	17	83	43
Vermont	16	286	19	81	31	53	294	15	85	46
Virginia	17	282	24	76	28	51	291	19	81	42
Washington	19	283	24	76	33	47	292	19	81	44
West Virginia	21	275	30	70	21	36	279	29	71	28
Wisconsin	19	286	22	78	38	46	293	17	83	45
Wyoming	19	284	19	81	31	48	291	16	84	41
Other **jurisdictions**										
District of Columbia	18	252	63	37	6	37	250	64	36	11
DDESS [1]	24	283	21	79	27	53	285	19	81	30
DoDDS [2]	22	286	18	82	31	58	290	18	82	40

‡ Reporting standards not met. Sample size is insufficient to permit a reliable estimate.
[1] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[2] Department of Defense Dependents Schools (Overseas).
NOTE: Results are not shown for students who reported that they didn't know their parents' highest level of education.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Mathematics Assessment.

Table B.10 Average mathematics scale scores and achievement-level results, by students with and without disabilities and limited English proficiency, grade 4 public schools: By state, 2003

	Students with disabilities: Yes					Students with disabilities: No					
			Percentage of students					Percentage of students			
	Weighted percentage of students assessed	Average scale scores	Below *Basic*	At or above *Basic*	At or above *Proficient*	Weighted percentage of students assessed	Average scale scows	Below *Basic*	At or above *Basic*	At or above *Proficient*	Weighted percentage of students excluded
Nation (public)	11	214	50	50	12	89	236	21	79	34	3
Alabama	10	192	78	22	3	90	227	31	69	20	2
Alaska	16	212	54	46	11	84	237	20	80	34	1
Arizona	9	210	56	44	8	91	231	27	73	27	3
Arkansas	13	202	65	35	6	87	233	24	76	29	1
California	8	208	59	41	12	92	229	30	70	26	2
Colorado	11	209	57	43	9	89	238	19	81	37	2
Connecticut	10	219	44	56	17	90	243	15	85	44	3
Delaware	10	215	50	50	11	90	238	16	84	33	6
Florida	17	214	50	50	13	83	238	19	81	35	2
Georgia	11	209	57	43	11	89	233	25	75	29	2
Hawaii	10	197	73	27	5	90	230	27	73	25	2
Idaho	11	208	59	41	7	89	238	16	84	33	1
Illinois	13	215	49	51	14	87	236	24	76	34	3
Indiana	13	221	42	58	17	87	240	14	86	38	2
Iowa	13	213	54	46	7	87	242	11	89	40	2
Kansas	12	219	43	57	13	88	245	11	89	45	1
Kentucky	11	208	60	40	8	89	231	24	76	24	3
Louisiana	19	208	60	40	6	81	230	27	73	25	3
Maine	15	215	51	49	10	85	242	12	88	38	3
Maryland	10	215	51	49	13	90	235	25	75	33	3
Massachusetts	16	224	35	65	19	84	245	12	88	46	2
Michigan	7	219	41	59	14	93	237	21	79	36	3
Minnesota	12	220	43	57	17	88	245	13	87	45	2
Mississippi	5	212	53	47	12	95	223	37	63	17	5
Missouri	13	222	39	61	15	87	237	18	82	32	3
Montana	12	212	53	47	6	88	239	14	86	35	2
Nebraska	14	220	40	60	15	86	239	17	83	37	2
Nevada	11	206	60	40	9	89	230	27	73	25	3
New Hampshire	16	222	37	63	15	84	247	8	92	48	3
New Jersey	13	212	51	49	10	87	243	15	85	43	2
New Mexico	16	207	61	39	12	84	225	33	67	18	2
New York	11	215	49	51	11	89	239	18	82	36	3
North Carolina	14	230	30	70	26	86	244	13	87	43	4
North Dakota	14	215	49	51	9	86	241	12	88	38	2
Ohio	9	214	49	51	9	91	240	16	84	38	4
Oklahoma	14	209	57	43	8	86	232	21	79	25	3
Oregon	15	218	46	54	13	85	239	17	83	36	4
Pennsylvania	11	209	58	42	12	89	239	18	82	39	2
Rhode Island	19	210	56	44	9	81	235	22	78	33	2
South Carolina	11	221	38	62	14	89	238	19	81	34	6
South Dakota	13	219	44	56	15	87	240	14	86	37	1
Tennessee	11	206	61	39	12	89	230	27	73	25	2
Texas	8	224	35	65	16	92	239	16	84	34	7
Utah	10	213	50	50	9	90	237	18	82	34	2
Vermont	14	221	40	60	16	86	245	11	89	46	4
Virginia	9	220	41	59	15	91	241	15	85	38	4
Washington	12	214	53	47	11	88	242	14	86	40	2
West Virginia	13	208	61	39	7	87	234	20	80	26	3
Wisconsin	12	211	55	45	9	88	240	16	84	39	3
Wyoming	14	221	39	61	13	86	244	9	91	43	1
Other jurisdictions											
District of Columbia	10	177	91	9	2	90	208	61	39	8	4
DOESS[1]	10	220	39	61	11	90	239	13	87	33	2
DoDDS[2]	8	215	52	48	11	92	239	13	87	33	1

See notes at end of table. ▶

Table B.10 Average mathematics scale scores and achievement-level results, by students with and without disabilities and limited English proficiency grade 4 public schools: By state, 2003—Continued

	Limited-English-proficient students									
	Yes					No				
	Percentage of students					Percentage of students				
	Weighted percentage of students assessed	Average scale scores	Below *Basic*	At or above *Basic*	At or above *Proficient*	Weighted percentage of students assessed	Average scale scores	Below *Basic*	At or above *Basic*	At or above *Proficient*	Weighted percentage of students excluded
Nation (public)	9	214	51	49	9	91	236	21	79	34	1
Alabama	1	‡	‡	‡	‡	99	224	35	65	19	#
Alaska	18	215	52	48	12	82	237	20	80	34	#
Arizona	18	207	62	38	6	82	234	23	77	30	2
Arkansas	3	221	37	63	16	97	229	28	72	27	1
California	32	212	53	47	8	68	235	23	77	32	2
Colorado	9	206	65	35	5	91	238	19	81	37	1
Connecticut	3	211	54	46	3	97	242	16	84	42	1
Delaware	2	‡	‡	‡	‡	98	236	19	81	31	1
Rorida	9	222	38	62	16	91	235	23	77	33	2
Georgia	4	208	59	41	8	96	231	27	73	28	1
Hawaii	5	197	77	23	2	95	228	29	71	24	2
Idaho	6	211	56	44	7	94	237	18	82	32	1
Illinois	7	204	66	34	5	93	235	24	76	34	2
Indiana	3	216	45	55	8	97	239	17	83	36	#
Iowa	3	217	46	54	6	97	239	16	84	36	1
Kansas	3	224	33	67	16	97	242	15	85	42	#
Kentucky	1	‡	‡	‡	‡	99	229	27	73	22	1
Louisiana	2	‡	‡	‡	‡	98	226	33	67	21	#
Maine	1	‡	‡	‡	‡	99	238	17	83	34	1
Maryland	3	219	44	56	15	97	234	27	73	32	2
Massachusetts	4	217	45	55	9	96	243	14	86	43	1
Michigan	5	228	37	63	24	95	236	22	78	35	1
Minnesota	5	213	50	50	7	95	244	14	86	44	1
Mississippi	0	‡	‡	‡	‡	100	223	38	62	17	1
Missouri	2	‡	‡	‡	‡	98	235	20	80	30	1
Montana	4	208	60	40	2	96	237	17	83	32	#
Nebraska	4	204	66	34	5	96	238	18	82	35	1
Nevada	15	208	61	39	6	85	231	25	75	26	2
New Hampshire	2	224	40	60	19	98	244	12	88	43	1
New Jersey	4	213	52	48	7	96	240	18	82	40	1
New Mexico	28	209	59	41	7	72	228	29	71	21	2
New York	5	206	61	39	6	95	237	19	81	34	3
North Carolina	5	231	26	74	25	95	243	15	85	42	1
North Dakota	4	211	54	46	5	96	239	15	85	35	#
Ohio	1	213	53	47	18	99	238	19	81	36	1
Oklahoma	6	220	41	59	16	94	230	26	74	23	1
Oregon	11	212	54	46	9	89	239	17	83	36	1
Pennsylvania	2	‡	‡	‡	‡	98	236	22	78	36	1
Rhode Island	8	196	77	23	3	92	233	24	76	30	2
South Carolina	2	‡	‡	‡	‡	98	236	21	79	32	#
South Dakota	4	206	66	34	5	96	238	16	84	35	#
Tennessee	1	‡	‡	‡	‡	99	228	30	70	24	#
Texas	15	219	40	60	11	85	241	14	86	37	2
Utah	11	215	49	51	10	89	237	18	82	34	1
Vermont	2	‡	‡	‡	‡	98	242	15	85	42	#
Virginia	6	226	32	68	19	94	240	16	84	37	2
Washington	6	212	55	45	7	94	240	17	83	38	1
West Virginia	0	‡	‡	‡	‡	100	231	25	75	24	#
Wisconsin	6	215	48	52	10	94	238	19	81	37	1
Wyoming	4	215	46	54	10	96	242	11	89	40	#
Other jurisdictions											
District of Columbia	6	200	72	28	3	94	205	63	37	7	1
DDESS[1]	3	‡	‡	‡	‡	97	237	15	85	31	1
DoDDS[2]	6	221	40	60	14	94	238	14	86	32	1

The estimate rounds to zero.
‡ Reporting standards not met. Sample size is insufficient to permit a fellable estimate.
[1] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[2] Department of Defense Dependents Schools (Overseas).
NOTE: Detail may not sum to totals because of rounding. h e results for students with disabilities and limited-English-proficient students are bared on students who were assessed and cannot be generalized to lhe total population of such students. The weighted percentages of students with and wimoul disabilities and limited English proficiency are based on the total number of students assessed while the percentages excluded are based on the number of students sampled.
SOURCE: U.S. Department of Educauon. Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP). 2003 Mathematics Assessment.

Table B.11 Average mathematics scale scores and achievement-level results, by students with and without disabilities and limited English proficiency, grade 8 public schools: By state, 2003

	Students with disabilities										
	Yes					No					
			Percentage of students					Percentage of students			
	Weighted percentage of students assessed	Average scale scores	Below *Basic*	At or above *Basic*	At or above *Proficient*	Weighted percentage of students assessed	Average scale scores	Below *Basic*	At or abwe *Basic*	At or above *Proficient*	Welghted percentage of students excluded
Nation (public)	11	242	71	29	6	89	280	29	71	30	3
Alabama	11	213	88	12	2	89	268	42	58	17	2
Alaska	14	248	66	34	9	86	284	25	75	33	1
Arizona	9	240	75	25	3	91	274	35	65	23	3
Arkansas	13	219	88	12	1	87	273	35	65	21	1
California	10	232	80	20	5	90	271	40	60	24	1
Colorado	11	249	65	35	7	89	287	22	78	38	1
Connecticut	12	252	60	40	8	88	288	22	78	39	3
Delaware	9	237	80	20	3	91	281	27	73	28	8
Florida	12	235	76	24	5	88	277	33	67	26	2
Georgia	10	234	76	24	6	90	274	37	63	23	2
Hawaii	13	228	87	13	1	87	271	38	62	19	3
Idaho	10	241	75	25	5	90	284	22	78	31	1
Illinois	12	241	72	28	5	88	282	28	72	33	4
Indiana	12	244	69	31	4	88	286	21	79	34	2
Iowa	14	245	72	28	4	86	290	16	84	38	2
Kansas	11	252	61	39	6	89	288	20	80	38	2
Kentucky	9	230	83	17	3	91	279	30	70	26	4
Louisiana	12	233	79	21	4	88	271	38	62	19	4
Maine	13	253	62	38	7	87	286	20	80	33	4
Maryland	11	248	65	35	12	89	281	29	71	32	3
Massachusetts	15	254	59	41	9	85	292	18	82	43	2
Michigan	9	240	73	27	5	91	280	28	72	30	4
Minnesota	11	251	61	39	6	89	296	13	87	48	2
Mississippi	4	231	86	14	2	96	262	51	49	13	5
Missouri	12	247	70	30	5	88	283	24	76	31	4
Montana	11	246	69	31	4	89	291	15	85	39	2
Nebraska	12	250	65	35	4	88	287	20	80	36	3
Nevada	11	233	78	22	4	89	272	37	63	22	2
New Hampshire	16	258	56	44	8	84	292	15	85	40	3
New Jersey	15	247	66	34	7	85	287	22	78	38	1
New Mexico	18	238	74	26	6	82	269	42	58	17	2
New York	13	243	68	32	7	87	285	24	76	36	4
North Carolina	13	255	56	44	13	87	285	24	76	35	3
North Dakota	13	253	59	41	6	87	292	13	87	41	1
Ohio	8	245	67	33	5	92	285	22	78	33	5
Oklahoma	14	238	76	24	4	86	277	29	71	23	
Oregon	12	249	66	34	7	88	285	25	75	35	
Pennsylvania	13	244	73	27	6	87	284	25	75	33	
Rhode Island	18	244	69	31	8	82	278	30	70	27	
South Carolina	8	249	62	38	5	92	280	30	70	28	
South Dakota	9	246	69	31	5	91	289	17	83	38	2
Tennessee	12	242	70	30	16	88	272	37	63	22	3
Texas	10	245	72	28	4	90	281	27	73	27	6
Utah	9	243	73	27	5	91	284	24	76	34	2
Vermont	15	258	54	46	10	85	291	17	83	39	3
Virginia	9	255	58	42	10	91	285	24	76	33	6
Washington	11	240	74	26	5	89	286	22	78	36	2
West Virginia	14	232	86	14	1	86	277	30	70	23	3
Wisconsin	13	247	69	31	7	87	289	18	82	39	3
Wyoming	14	248	70	30	4	86	289	16	84	37	1
Other Jurisdictions											
District of Columbia	11	204	96	4	1	89	248	67	33	7	5
DDESS[1]	11	249	66	34	6	89	286	17	83	29	1
DoDDS[2]	6	236	75	25	2	94	289	18	82	36	1

See notes at end of table ▶

Table B.11 Average mathematics scale scores and achievement-level results, by students with and without disabilities and limited English proficiency, grade 8 public schools: By state, 2003—Continued

	Limited-English-proficient students									
	Yes					No				
	Percentage of students					Percentage of students				
	Weighted percentage of students assessed	Average scale scores	Below *Basic*	At or above *Basic*	At or above *Proficient*	Weighted percentage of students assessed	Average scale scores	Below *Basic*	At or above *Basic*	At or abow *Proficient*	Welghted percentage of students excluded
Nation (public)	5	241	74	26	5	95	278	31	69	29	1
Alabama	1	‡	‡	‡	‡	99	262	47	53	16	#
Alaska	11	251	63	37	9	89	283	26	74	33	#
Arizona	14	246	73	27	4	86	275	33	67	24	2
Arkansas	2	‡	‡	‡	‡	98	266	41	59	19	1
California	19	239	76	24	4	81	274	37	63	26	2
Colorado	4	243	75	25	5	96	285	24	76	36	1
Connecticut	3	241	69	31	11	97	285	26	74	35	1
Delaware	1	‡	‡	‡	‡	99	278	31	69	26	1
florida	6	236	78	22	2	94	273	36	64	25	1
Georgia	2	239	75	25	4	98	270	40	60	22	1
Hawaii	5	238	79	21	2	95	267	42	58	18	1
Idaho	5	241	74	26	3	95	282	25	75	30	#
Illinois	3	237	80	20	4	97	279	31	69	30	1
Indiana	2	‡	‡	‡	‡	98	282	26	74	31	#
Iowa	2	245	68	32	9	98	285	23	77	34	#
Kansas	3	249	67	33	9	97	285	23	77	35	1
Kentucky	1	‡	‡	‡	‡	99	275	34	66	24	1
Louisiana	1	‡	‡	‡	‡	99	266	43	57	17	1
Maine	1	‡	‡	‡	‡	99	282	25	75	30	#
Maryland	2	‡	‡	‡	‡	98	278	32	68	30	1
Massachusetts	2	242	71	29	4	98	287	23	77	39	1
Michigan	2	‡	‡	‡	‡	98	277	32	68	28	1
Minnesota	3	253	56	44	4	97	292	17	83	45	1
Mississippi	1	‡	‡	‡	‡	99	261	53	47	12	#
Missouri	1	‡	‡	‡	‡	99	279	29	71	28	#
Montana	2	‡	‡	‡	‡	98	287	20	80	36	#
Nebraska	2	‡	‡	‡	‡	98	283	25	75	33	1
Nevada	7	234	78	22	3	93	270	38	62	21	1
New Hampshire	1	‡	‡	‡	‡	99	286	21	79	35	#
New Jersey	2	‡	‡	‡	‡	98	282	27	73	34	1
New Mexico	19	240	75	25	3	81	269	41	59	18	1
New York	4	237	79	21	3	96	282	27	73	33	2
North Carolina	3	250	62	38	7	97	282	27	73	33	1
North Dakota	2	‡	‡	‡	‡	98	288	18	82	37	#
Ohio	1	235	78	22	3	99	282	26	74	31	#
Oklahoma	5	251	60	40	12	95	273	34	66	20	1
Oregon	6	246	70	30	4	94	283	27	73	34	1
Pennsylvania	2	‡	‡	‡	‡	98	279	31	69	30	#
Rhode Island	4	228	87	13	3	96	274	35	65	25	2
South Carolina	1	‡	‡	‡	‡	99	277	32	68	26	#
South Dakota	3	239	75	25	4	97	286	20	80	36	#
Tennessee	2	‡	‡	‡	‡	98	269	41	59	21	1
Texas	6	243	75	25	4	94	279	29	71	26	2
Utah	7	248	67	33	7	93	283	26	74	33	1
Vermont	1	‡	‡	‡	‡	99	286	23	77	35	#
Virginia	2	‡	‡	‡	‡	98	282	27	73	31	2
Washington	4	246	69	31	6	96	283	26	74	33	1
West Virginia	#	‡	‡	‡	‡	100	271	37	63	20	#
Wisconsin	3	‡	‡	‡	‡	97	285	23	77	36	1
Wyoming	3	254	64	36	7	97	285	22	78	33	#
Other jurisdictions											
District of Columbia	4	231	79	21	3	96	244	70	30	6	1
DDESS[1]	6	‡	‡	‡	‡	94	283	20	80	28	1
DoDDS[2]	3	256	59	41	9	97	287	20	80	35	1

h e estimate rounds to zero.
‡ Reporting standards not met. Sample sue is insufficient to permit a reliable estimate.
[1] Department of Defense Domestic Dependent Elementary and Secondary Schools.
[2] Department of Defense Dependents Schools (Overseas).
NOTE: Detail may not sum to totals because of rounding. The results for students with disabilities and limited-English-proficient students are based on students who were assessed and cannot be generalized to the total population of such students. The weighted percentages of students with and without disabilities and limited English proficiency are based on the total number of students assessed while the percentages excluded are based on the number of students sampled.
SOURCE: U.S. Department of Education. Institute of Education Sciences. National Center for Education Statistics, National Assessment of Educational Progress (NAEP). 2003 Mathematics Assessment

The Nation's Report Card

Mathematics Highlights 2003

National Center for Education Statistics

NAEP on the Web

http://nces.ed.gov/nationsreportcard

The **NAEP** web site offers a wealth of assessment information, publications, and analysis tools, including

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- national and state report cards on student achievement in core subject areas such as mathematics, reading, and science

  sample questions, student answers, and scoring guides

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More **Information**

Additional results and detailed information about the NAEP 2003 Mathematics Assessment can be found on the NAEP web site. Additional NAEP publications can be ordered from

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Additional information about the NAEP mathematics framework and achievement levels can be found on the National Assessment Governing Board web site at http://www.nagb.org.

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