

MIAMI-DADE COUNTY PUBLIC SCHOOLS
Summary of National, State, and District Results for the
2009 National Assessment of Educational Progress
Trial Urban District Assessment
Science, Grades 4 and 8

On February 24, 2011, the National Center for Education Statistics (NCES) released results from the 2009 National Assessment of Educational Progress (NAEP) science assessment for districts participating in the Trial Urban District Assessment (TUDA) program. The science assessment was administered January 26 through March 6, 2009. NAEP is an assessment overseen by the National Center for Education Statistics for the United States Department of Education. It is often referred to as the “Nation’s Report Card,” and is administered biennially to a representative sample of students nationwide to facilitate comparisons using a common measure. As such, NAEP provides a view of student achievement that is not available through states’ individual assessment programs. It provides information about student performance over time, and allows a comparison of progress with other districts, states, and the nation as a whole. In Spring 2009, the content areas assessed were mathematics, reading, and science. Results for mathematics and reading were released in December 2009 and May 2010, respectively.

Originally, only national summary data were reported; however, in 1990 state-by-state comparisons became available. In 2002, through the collaboration among NCES, the National Assessment Governing Board, and the Council of Great City Schools, the TUDA program was established, making it possible for selected large urban districts to receive district-level data. The TUDA project facilitates comparisons among large urban districts that face similar challenges with regard to poverty and high risk populations. In 2009, 18 districts participated: Atlanta, Austin, Baltimore City*, Boston, Charlotte, Chicago, Cleveland, Detroit*, District of Columbia**, Fresno*, Houston, Jefferson County* (KY), Los Angeles, Miami-Dade*, Milwaukee*, New York City, Philadelphia*, and San Diego. Miami-Dade County Public Schools (M-DCPS) and six other districts (denoted by an asterisk) participated in the TUDA program for the first time during the spring 2009 administration. It was recently announced that three additional districts will join TUDA beginning with the NAEP 2011 assessments: Albuquerque, Hillsborough (Tampa, FL), and Dallas.

Although TUDA districts participate in the regular NAEP testing program, more students are tested in TUDA districts so that reliable district-level data can be provided. Participating students only test in one subject area, and neither individual students’ scores nor school-level results are reported. In M-DCPS, approximately 4,200 students from 145 schools participated in the Spring 2009 assessment.

****Note.** Sufficient numbers of students did not take the science assessment in the District of Columbia to be included in the TUDA analysis. As such, the science results added the performance of the remaining 17 jurisdictions.

Program Description

NAEP has two types of assessments: main NAEP and long-term trend NAEP. Main NAEP assessments are conducted in a range of subjects with 4th, 8th, and 12th graders across the country. Assessments are given most frequently in mathematics, reading, science, and writing. Other subjects, such as the arts, civics, economics, geography, and U.S. history are assessed periodically. Long-term trend NAEP measures student performance in mathematics and reading. The long-term trend assessment allows the performance of today's students to be compared with those from more than 30 years ago. The assessment is administered to 9-, 13-, and 17-year-olds every four years. For nearly four decades, NAEP assessments have been conducted periodically in reading, mathematics, science, writing, U.S. history, civics, geography, and other subjects.

NAEP assessments are administered to demographically representative samples of students in the nation, different regions of the country, states, and large urban districts. TUDA is a special program which provides district-level results for selected urban districts. Districts are invited to participate based on a range of characteristics, such as district size, minority concentrations, federal program participation, socioeconomic conditions, and percentages of students with disabilities (SD), and English language learners (ELL). It is supported by federal appropriations authorized under the No Child Left Behind Act. The first TUDA took place in conjunction with the 2002 state NAEP reading and writing assessments and again in 2003, 2005, 2007, and 2009. M-DCPS participated for the first time in 2009. The 2011 testing cycle is currently being carried out across the county, including in selected M-DCPS schools.

NAEP Scores

NAEP/TUDA results are reported as scale scores, which can range from 0-500 in mathematics and reading. In science the scale scores can range from 0 to 300. For each grade and subject area, the scale score continuum is divided into the three achievement levels: Basic, Proficient, and Advanced. When a scale score falls below the lower boundary for Basic, it is described simply as "below Basic." Although the achievement levels appear to be similar to those reported for the Florida Comprehensive Assessment Test, caution should be used in making direct comparisons because of the different type of assessment frameworks measured, the type of test items used, and the psychometric properties of the tests. Basic is described as "partial mastery of prerequisite knowledge and skills that are fundamental for proficient work;" Proficient as "solid academic performance;" and Advanced as "superior performance."

Students who participate in NAEP/TUDA are assessed in only one subject-area, and are also asked background questions, such as how often they use a computer and in what type of classes they are enrolled. NAEP results are not reported for individual students or for schools; summary results are only reported for the nation, states, and the participating TUDA districts.

Summary results typically examine trends in scale scores or in the percentages of students scoring at or above the Basic achievement level. Comparisons are provided between groups of students, disaggregated by gender and race/ethnicity, and for students eligible for the National School Lunch Program, students with disabilities, and English language learners.

NAEP Science Assessment

The NAEP 2009 framework for science was revised in 2009 with a greater emphasis placed on international assessments' frameworks such as those for Trends in International Mathematics and Science Study (TIMSS) and Programme for International Student Assessment (PISA). Prior NAEP science results are not comparable to 2009, as they used the earlier frameworks. In comparison to earlier frameworks the 2009 utilizes a "crosscutting content" approach, whereas one question posed on the assessments might require the knowledge of another category of science to answer it. The NAEP 2009 science assessment content frameworks gather data on students' conceptual understanding and knowledge of science facts, concepts, principles, laws and theories. Also included in the framework are components of scientific inquiry and technological design.

The frameworks of the 2009 Science Assessment are anchored into three broad categories of science content: Physical Science (focusing on matter, energy, and motion), Life Science (focusing on structures and functions of living systems) and Earth and Space Sciences (focusing on earth in space and time, earth structures, and earth systems). Additionally, the NAEP 2009 science assessment included hands-on performance-based and interactive computer tasks, which were completed by separate samples of students than the paper-pencil assessment. Results from the separate samples are not included within this NAEP 2009 science assessment release; however, they will be reported in a special research study in the future. It should be noted that the grade 4 assessment items were distributed evenly across Physical Science, Life Science, and Earth and Space Sciences; while the grade 8 assessment had a greater content focus on the Earth and Space Sciences.

NAEP 2009 science items come in two formats: multiple choice and constructed responses (short and extended and concept mapping tasks). In grade 4, 68% of the items were multiple choice and 64% in grade 8. Each item makes certain demands on students' thinking, ranging from low to high in cognitive complexity. The science assessments are designed so 60% of the items focus on conceptual understanding, 30% on scientific inquiry, and 10% on technological design.

Summary of Results

M-DCPS students' performance on 2009 NAEP Science paralleled the outstanding results reported earlier on 2009 NAEP Reading and Mathematics, when compared to their counterparts nationwide. Complete District results are available online at <http://www.fldoe.org/asp/naep/naep2009science.asp>, and State and National Summary Reports are available at <http://www.nces.ed.gov/nationsreportcard/>. Following are some highlights of the results from the Spring 2009 administration of the NAEP science assessment. Figures and tables which illustrate the results and compare the District to the state, all public schools in the nation, other large city schools (populations over 250,000), and other participating TUDA districts are also provided.

MIAMI-DADE COUNTY PUBLIC SCHOOLS
Highlights of the
2009 National Assessment of Educational Progress (NAEP)
Trial Urban District Assessment (TUDA) Results
Science, Grades 4 and 8

Overall

- M-DCPS 4th and 8th grade students outperformed students in large city schools (population over 250,000) nationwide on the NAEP Science assessment in terms of average scale score and the percent scoring at or above Basic
- M-DCPS 4th and 8th grade Hispanic students outperformed their counterparts Nationwide in public schools and in large city schools both in average scores and in the percentage scoring at or above Basic and at or above Proficient.
- Results on this national science assessment reflected M-DCPS students' achievement, which is not typically revealed through the state's FCAT Science. Overall, 66% of the M-DCPS 4th grade students, and 49% of the 8th grade students scored at or above Basic on the 2009 NAEP Science assessment.

Grade 4

- M-DCPS 4th grade students scored as well or better than **all** of the other 16 TUDA districts.
 - Significantly higher percentages of the M-DCPS 4th grade students scored at or above Basic than 11 of the other TUDA districts, including New York City, Houston, Atlanta, and Chicago.
 - M-DCPS 4th graders scored on par with the remaining 5 TUDA districts, including Charlotte, NC; San Diego; and Boston.

Grade 8

- M-DCPS 8th grade students out performed students in large city schools (populations over 250,000).
 - Higher percentage of M-DCPS 8th grade students scored at or above Basic than 11 other TUDA districts including Boston, New York City, Atlanta, Los Angeles, and Chicago.
 - M-DCPS 8th graders scored on par with Charlotte, Houston, and San Diego.

Science, Grade 4

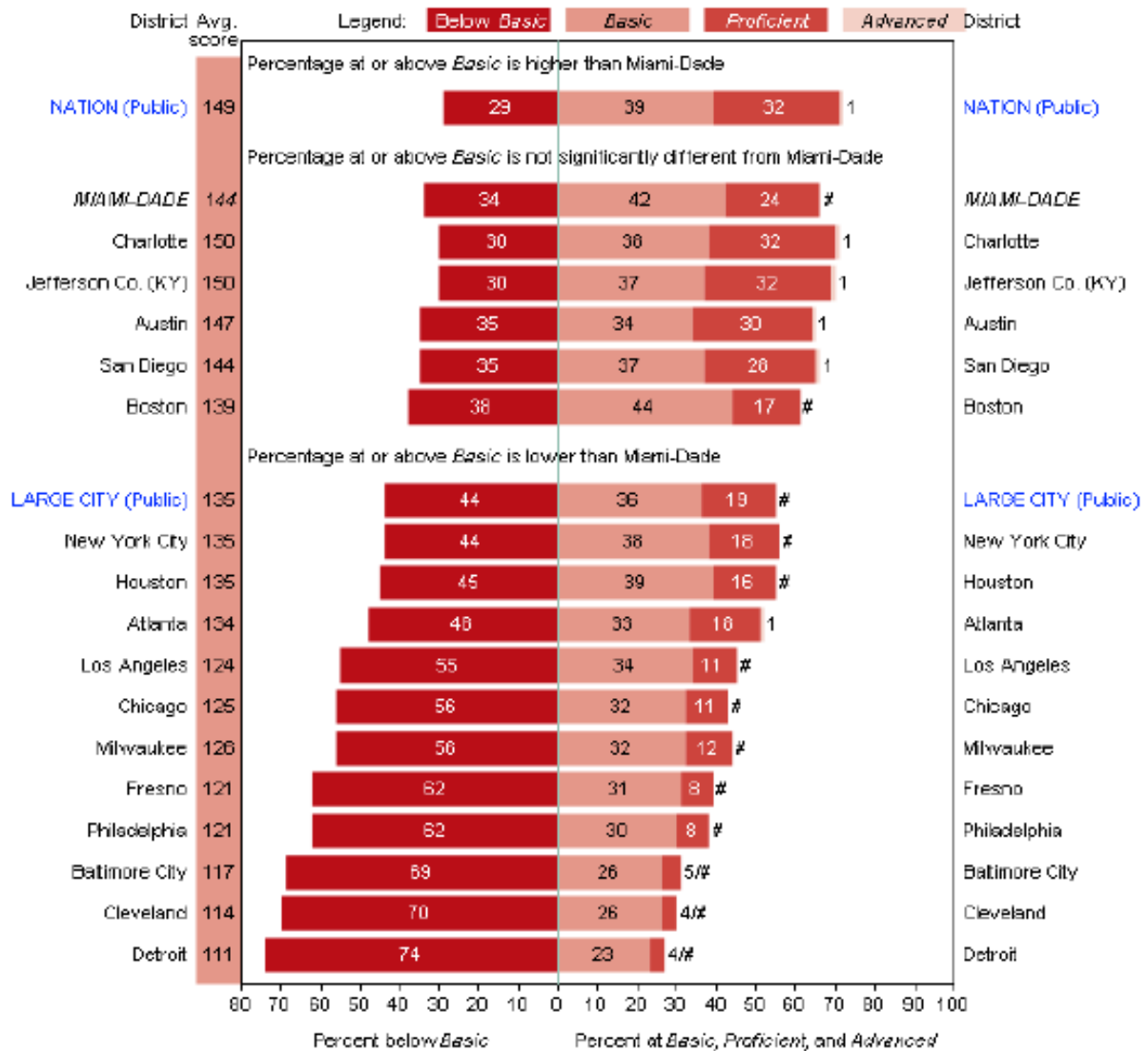


Figure 1. Average scale scores in NAEP science for fourth grade public school students, percentage within each achievement level, and Miami-Dade's percentage at or above *Basic* compared with the nation, large city and other participating districts: 2009. From *The Nation's Report Card Trial Urban District Report, Science 2009*, National Center for Education Statistics.

Science, Grade 8

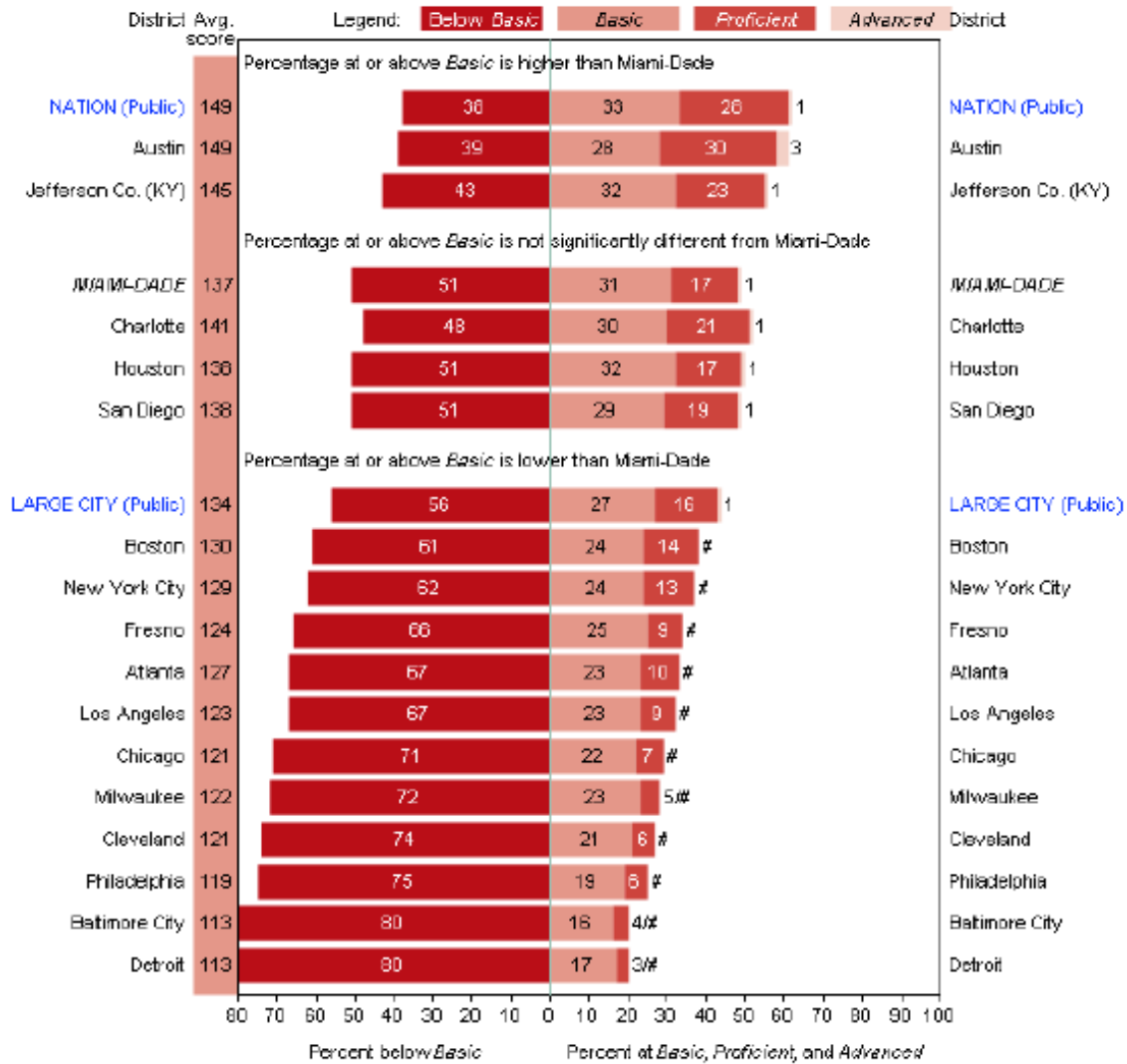


Figure 2. Average scale scores in NAEP science for eighth grade public school students, percentage within each achievement level, and Miami-Dade's percentage at or above *Basic* compared with the nation, large city and other participating districts: 2009. From *The Nation's Report Card Trial Urban District Report, Science 2009*, National Center for Education Statistics.

NAEP Science Grade 4 - Overall and by Ethnicity

Average Scale Score: 2009

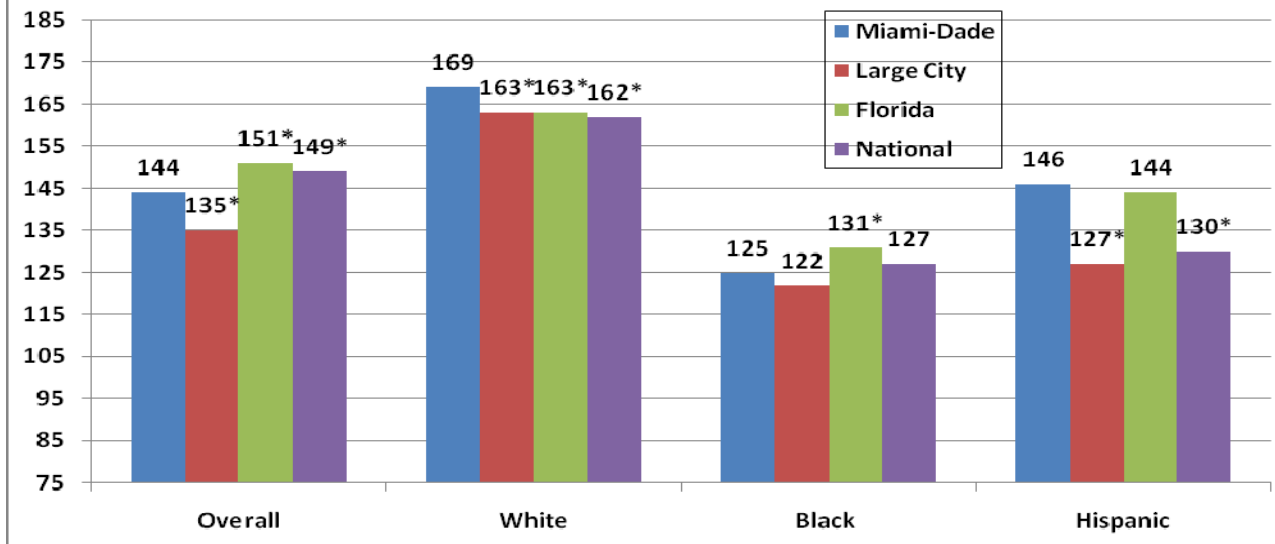


Figure 3. Results from the 2009 NAEP science assessment for Grade 4 students in the M-DCPS, Large Cities, Florida, and National Public Schools, overall and by ethnicity.

NAEP Science Grade 4 - By Subgroup

Average Scale Score: 2009

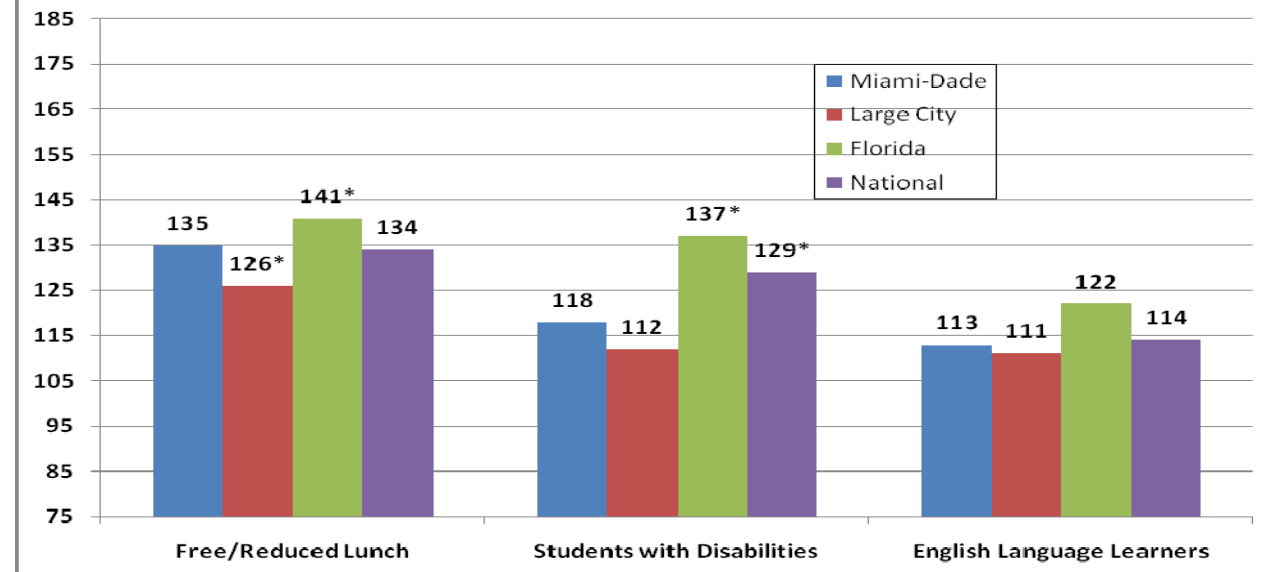


Figure 4. Results from the 2009 NAEP science assessment for Grade 4 students in the M-DCPS, Large Cities, Florida, and National Public Schools, by subgroup.

*Statistically significant differences between M-DCPS (total) and the other jurisdictions are displayed as $p > .05 = *$.

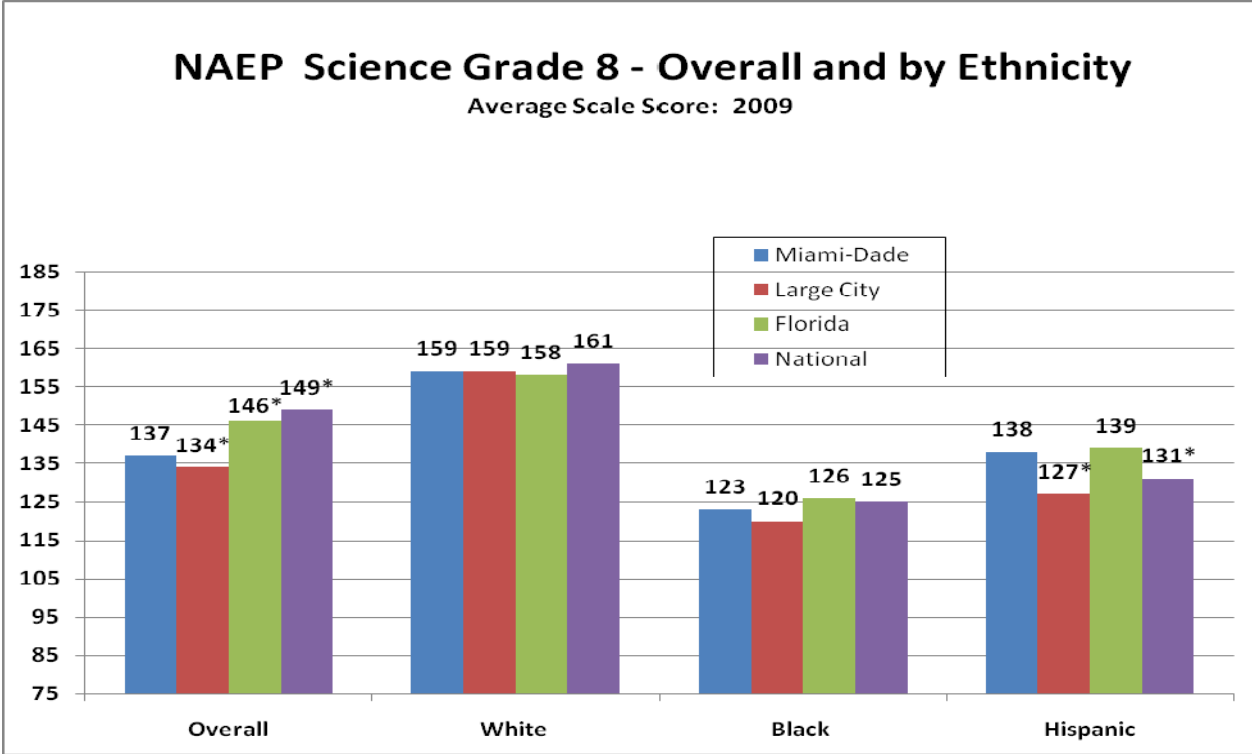


Figure 5. Results from the 2009 NAEP mathematics assessment for Grade 8 students in the M-DCPS, Large Cities, Florida, and National Public Schools, overall and by ethnicity.

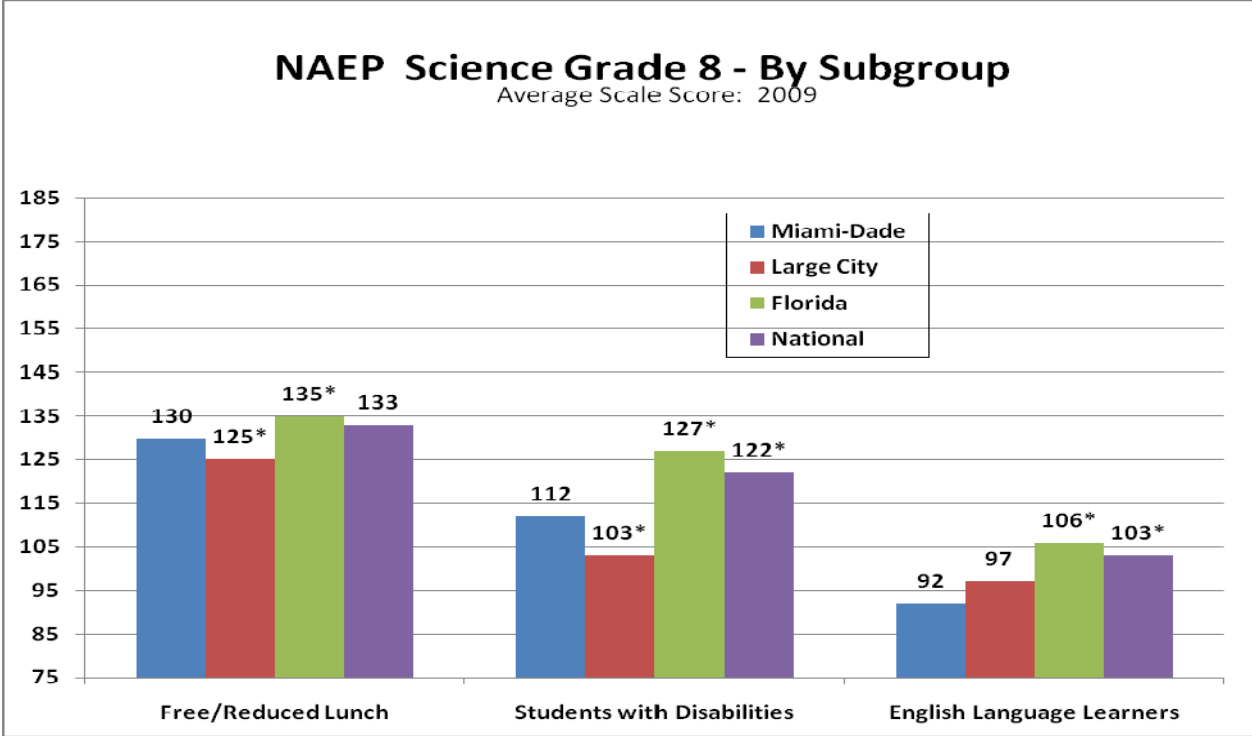


Figure 6. Results from the 2009 NAEP mathematics assessment for Grade 8 students in the M-DCPS, Large Cities, Florida, and National Public Schools, by subgroup.

*Statistically significant differences between M-DCPS (total) and the other jurisdictions are displayed as $p > .05 = *$.

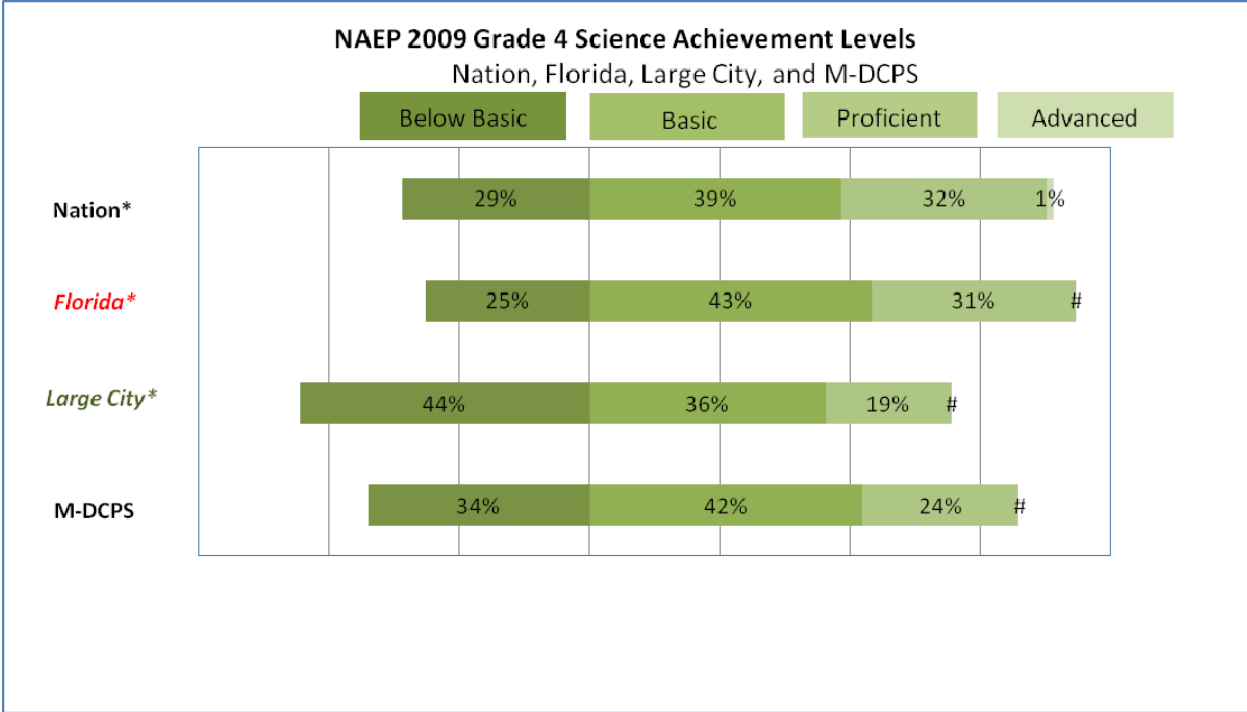


Figure 7. Percentage of students scoring in each achievement level from the 2009 NAEP science assessment for grade 4 students in the M-DCPS, Large Cities, Florida, and National Public Schools

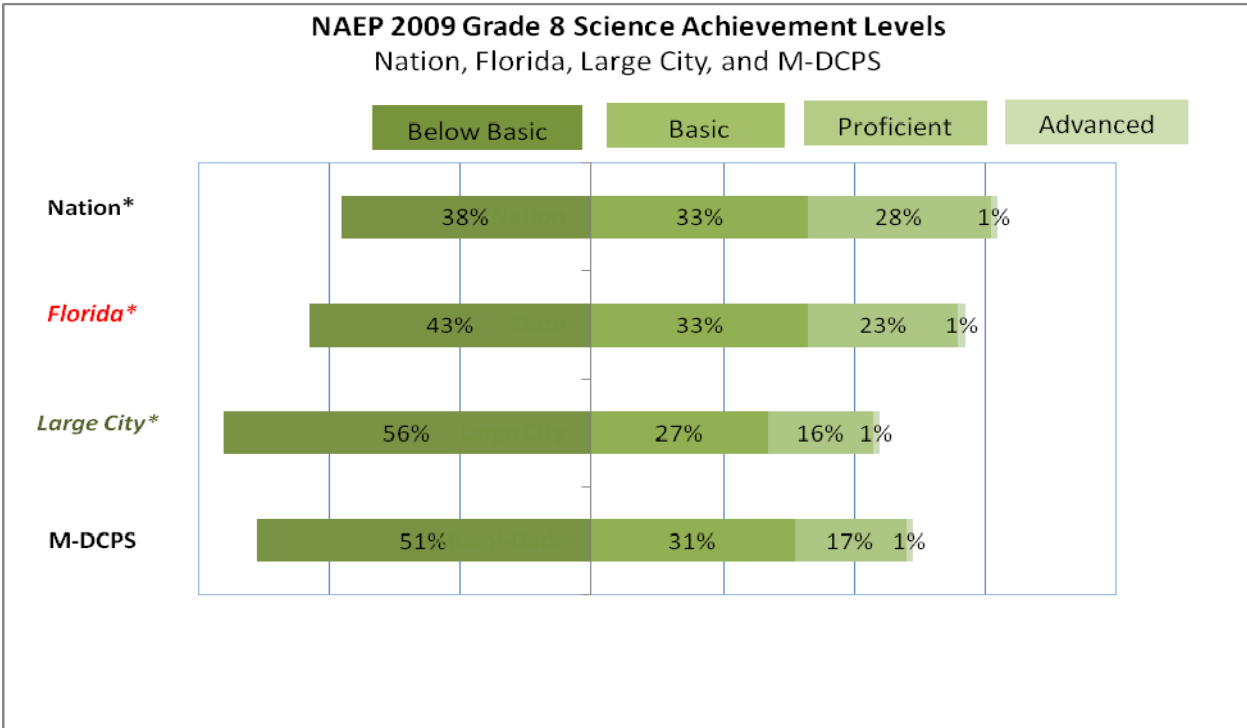


Figure 8. Percentage of students scoring in each achievement level from the 2009 NAEP science assessment for grade 8 students in the M-DCPS, Large Cities, Florida, and National Public Schools.

Note: Detail may not sum to 100% due to rounding. Statistically significant differences ($p > .05$) between jurisdictions in the percent of students scoring Basic or above, as compared to the M-DCPS, are indicated with an asterisk (*). Source: *The Nation's Report Card Trial Urban District Report, Science 2009*, National Center for Education Statistics.

Table 1
Miami-Dade County Public Schools
NAEP 2009 Science Results, by Jurisdiction and M-DCPS Subgroup

Jurisdiction/ Subgroup	Number/ Percent of Students Tested	Average Scale Score	Percent At or Above Basic	Percent At or Above Proficient	Percent at Advanced
GRADE 4					
National (total)	151,500	149*	71*	32*	1
Large City (total)	34,500	135*	56*	20*	-
Florida (total)	4,700	151*	75*	32*	-
Miami-Dade (total)	2,200	144	66	25	-
Gender					
Male	50%	144	67	27	-
Female	50%	143	66	23	-
Race/Ethnicity					
White	10%	169	92	57	-
Black	25%	125	44	7	-
Hispanic	62%	146	70	25	-
English Language Learners	8%	113	32	4	-
Students with Disabilities	12%	118	36	6	-
Eligible for Free/Reduced Lunch	68%	135	58	14	-
GRADE 8					
National (total)	146,300	149*	62*	29*	1*
Large City (total)	31,600	134*	44*	17	1
Florida (total)	4,300	146*	57*	25*	-
Miami-Dade (total)	2,000	137	49	18	1
Gender					
Male	50%	140	53	19	1
Female	50%	135	45	16	-
Race/Ethnicity					
White	10%	159	73	38	1
Black	23%	123	30	6	-
Hispanic	65%	138	50	18	1
English Language Learners	7%	92	8	1	-
Students with Disabilities	11%	112	17	3	-
Eligible for Free/Reduced Lunch	63%	130	40	11	-