NAEP

NAEP 101

Science October 2012

NAEP 101

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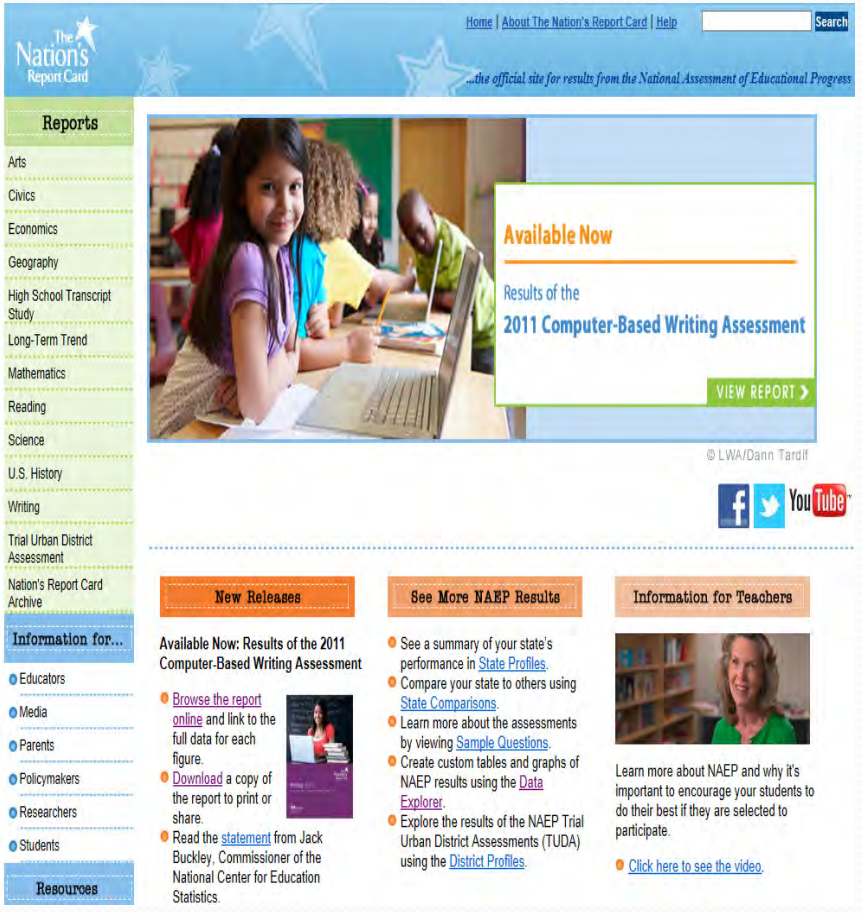
The Nation's Report Card

http://nationsreportcard.gov/

Provides an overview of NAEP, NAEP data, sample questions, state profiles, and a vast array of other information.



What is the National Assessment of Educational Progress (NAEP)?

- Authorized by Congress in 1969 as a national assessment to measure student performance and determine if students learning what they should be learning.
- A *reliable* way of determining areas of strengths and weaknesses in the American school system.
- Added state-level assessments in 1990 to provide participating states with grades 4 and 8 results in reading, mathematics, science, and writing. Also provides comparisons between states and the Nation.
- Florida has participated in every state-level NAEP since 1990, except in 2000.

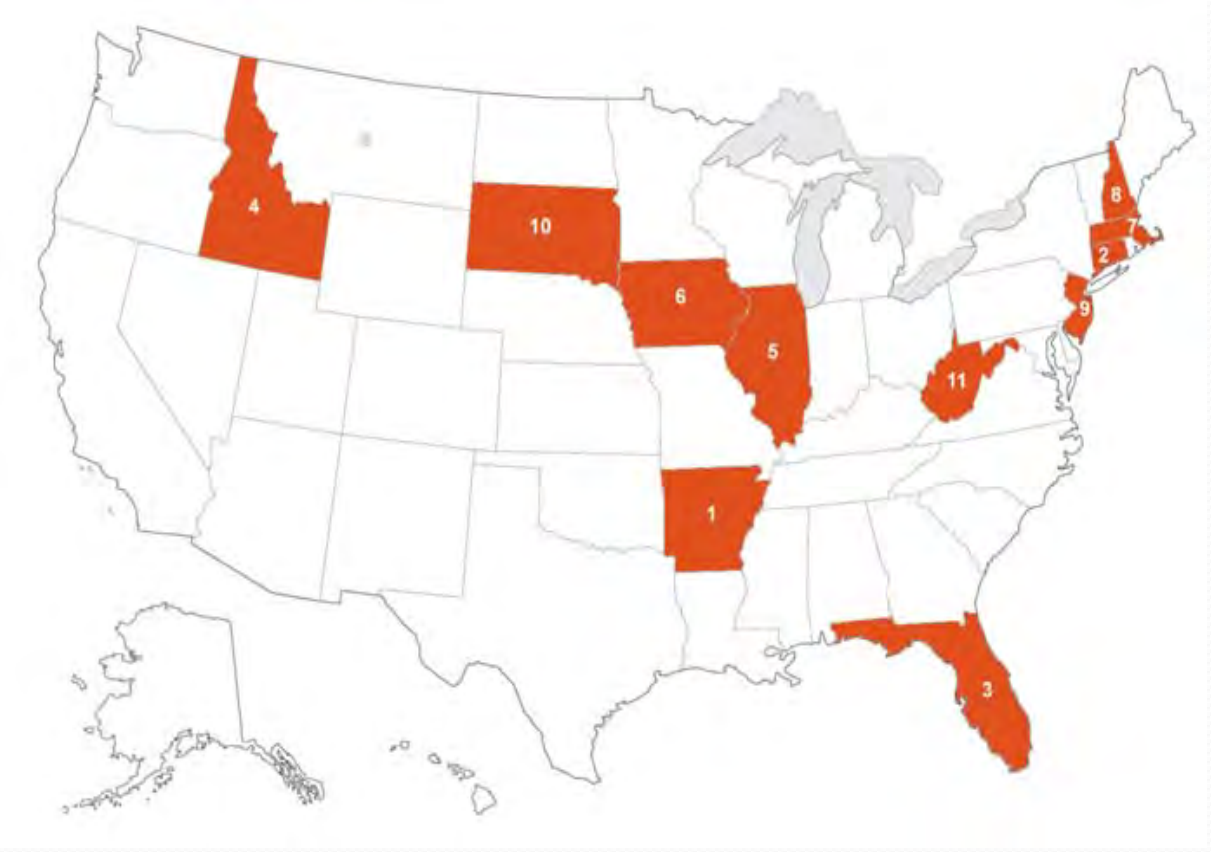
TUDA Districts 2013

The Trial Urban District Assessment (TUDA) began 10 years ago, and has grown from 5 to 21 large urban cities.

Grade 12 State-Level NAEP

In 2009, the option to participate in grade 12 state-level NAEP in reading and mathematics was offered and Florida was one of 11 states to volunteer.

This assessment is offered every 4 years.



Grade 12 State-Level NAEP

Demographics of 11 states participating in 2009 NAEP and the two additional states that will participate in 2013

STATE	# ENROLLED	WHITE	AA	HISPANIC	Per-pupil expenditures	Pupil/teacher Ratio
AR	482,114	65%	22%	10%	$8,853	14
CT	560,546	62%	13%	19%	$15,260	13
FL	2,643,347	43%	23%	28%	$8,747	15
ID	275,859	79%	1%	16%	$7,194	18
IL	2,091,654	51%	18%	23%	$11,120	16
IA	495,775	82%	5%	9%	$10,010	14
MA	955,563	68%	8%	15%	$14,478	14
NH	194,711	90%	2%	4%	$12,405	13
NJ	1,402,548	52%	17%	22%	$17,064	13
SD	126,128	80%	2%	3%	$8,881	13
WV	282,879	92%	5%	1%	$10,828	14
New states participating in 2013						
MI	1,587,067	70%	19%	6%	$10,171	18
TN	987,422	67%	24%	6%	$8,055	15

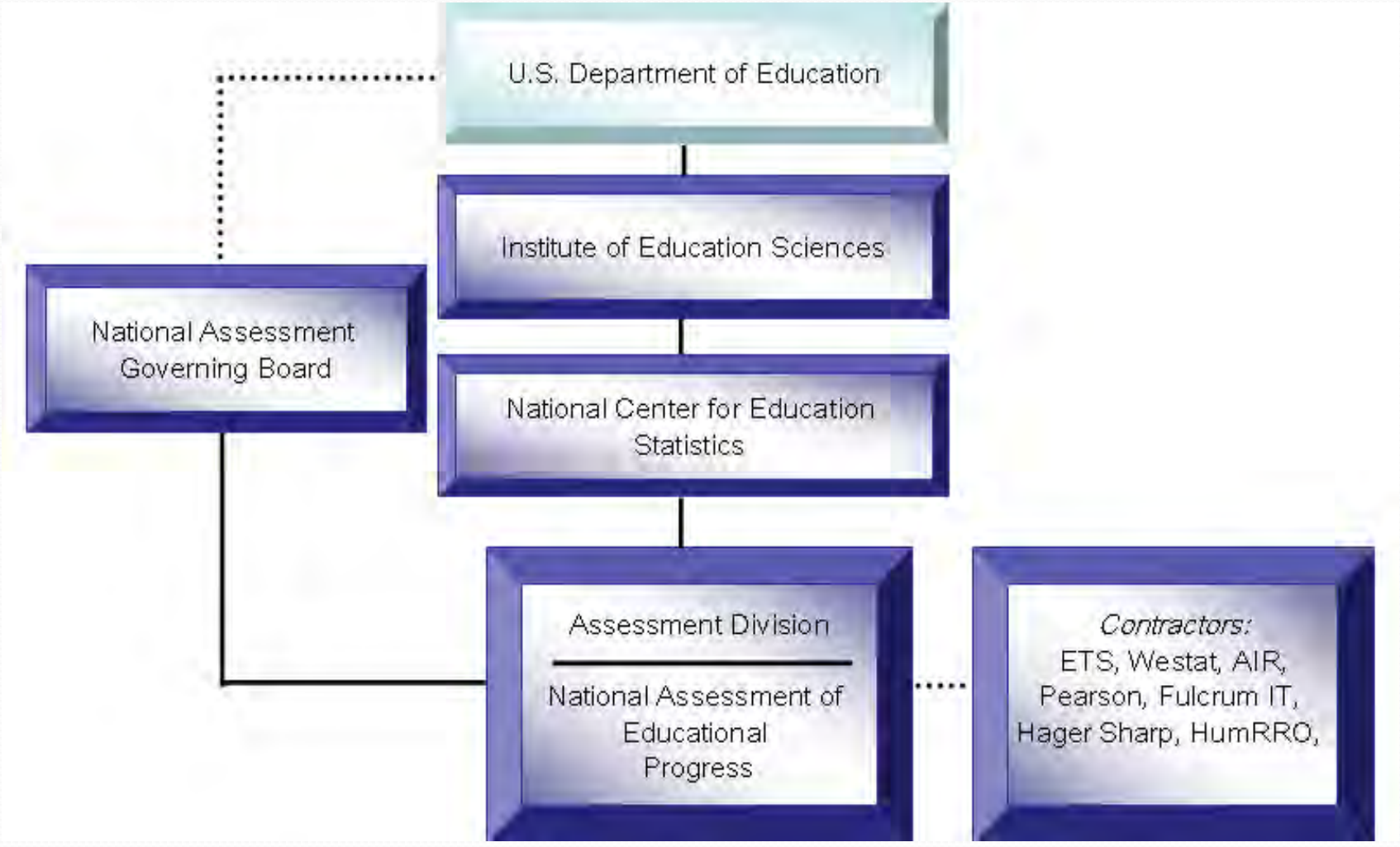
SOURCE: Common Core of Data, 2010-2011 school year

No Child Left Behind

- Beginning in 2003, No Child Left Behind (NCLB) required all states to participate in NAEP.

- States, districts, and schools that receive Title I funds must participate in NAEP if selected.
- Names of students and schools that are selected to participate must be kept confidential and student names must not leave the school.
- Parents/Guardians must be notified.

Organization of NAEP



National Assessment Governing Board (NAGB)

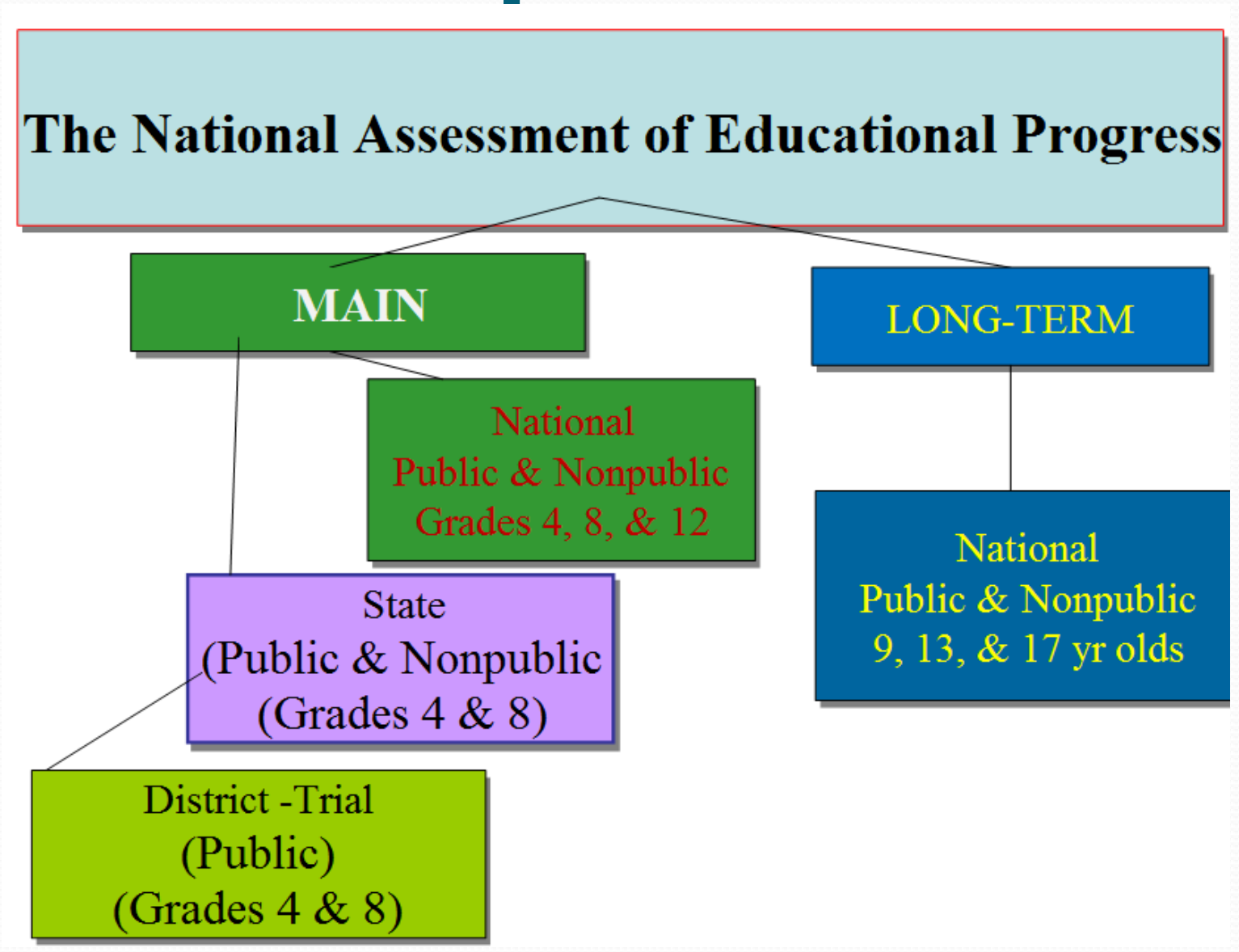
- Congress created the 26-member Governing Board in 1988 to set policy for NAEP.
- The Secretary of Education appoints NAGB board members, but the board is independent of the U.S. Department of Education.
- Since 1990, NAGB has set levels of achievement, guided the development of NAEP frameworks, and determined the content to be assessed.
- NAGB determines the appropriateness of assessment items and ensures they are free from bias.

NAEP and International Assessments in Florida

Florida State Statute 1008.22 (2)

"The Commissioner of Education shall direct Florida school districts to participate in the administration of NAEP, or similar national or international assessment program…"

NAEP Components



Why NAEP?

- NAEP state-level assessment results can be used to compare student performance across states, whereas individual statewide assessments vary from state to state.

- SAT and ACT results are insufficient to measure student performance across states because they are administered to a self-selected group.

- NAEP assesses a sample of students in a sample of schools in 52 jurisdictions (50 states, Washington D.C., and the Department of Defense activity schools), Puerto Rico, and 21 TUDAs.

How do NAEP and FCAT 2.0 Differ?

FCAT 2.0:

- Satisfies NCLB requirements
- Reports results for all students, schools, and districts
- Consequences for students and schools

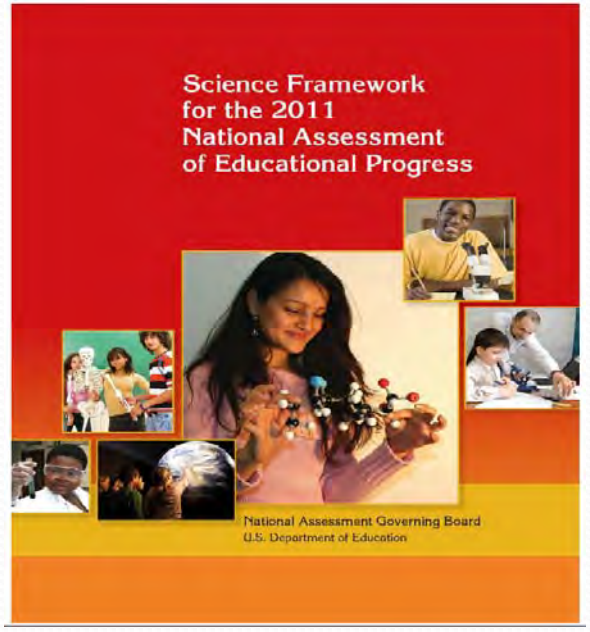
NAEP:

- Monitors student performance on a national and state level
- Reports results for student populations (race/ethnicity, gender, ELL, SD, NSLP)
- Does <u>not</u> provide student or school results

NAEP Science Framework

- NAGB develops the NAEP Frameworks and the test item specifications based on the frameworks. http://nces.ed.gov/nationsreportcard/frameworks.asp

- A new science framework was released in 2009, breaking the trend from 1996 to 2005 due to major differences in the frameworks.



- The 2011 NAEP Science Report Card included student performance trends from 2009 to 2011.

NAEP Science Test Items

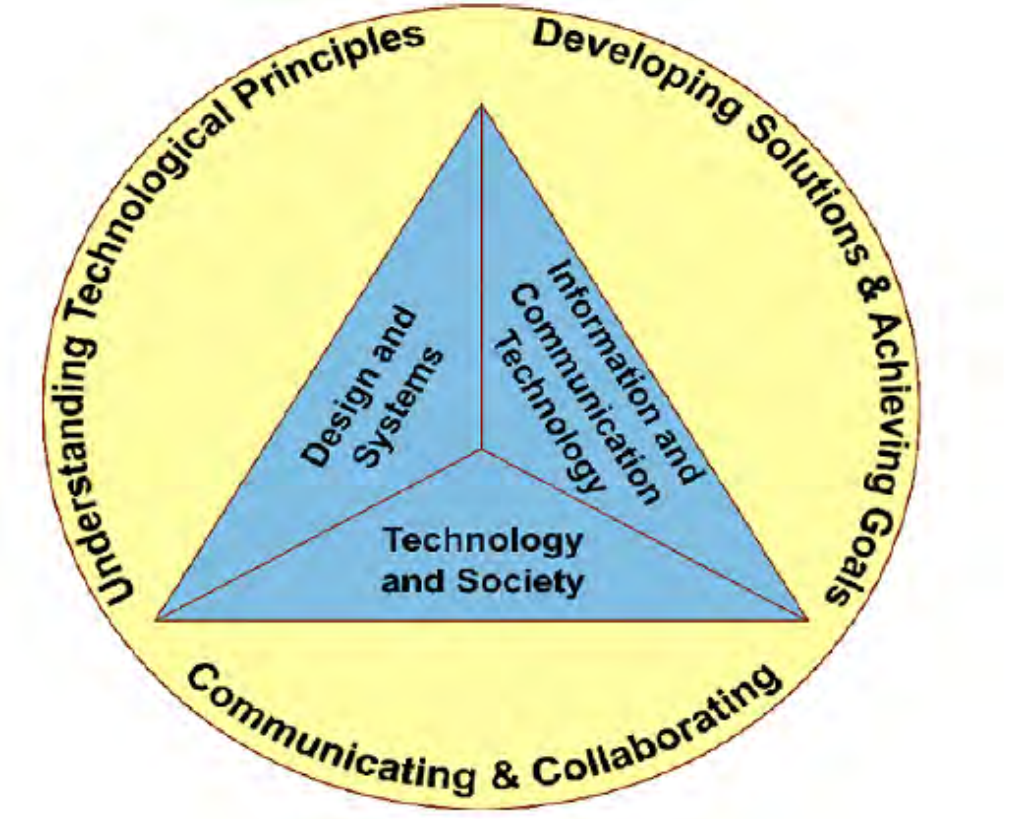
- Test items are developed by teachers, subject-area specialists, and assessment experts, and are then reviewed for quality, bias, and sensitivity by content-area experts.
- Multiple-choice and both short and extended constructed-response questions are included in the assessment.
- No one student takes the entire NAEP assessment.
- Each student receives one booklet in one subject containing approximately 16 to 20 questions.

NAEP Assesses Many Subjects

- Primary Subjects for national and state-level NAEP
  - Reading and Mathematics (every odd-numbered year)
  - Writing and Science on a rotating basis (every fourth odd-numbered year)
- National NAEP (every even-numbered year)
  - Civics
  - U.S. History
  - Geography
  - Economics
  - Technology and Engineering Literacy (TEL) Assessment
  - Arts
- Special Studies
  - Long-term Trend NAEP (every fourth year in even-numbered years)
  - High School Transcript Study (HSTS) (every fourth year in odd-numbered years)

Technology and Engineering Literacy Assessment (TEL)

Special study designed to explore the use of technology, especially the use of the computer, as a tool to enhance the quality and efficiency of educational assessments.



TEL

Video Clips of Sample Scenarios

TECHNOLOGY AND ENGINEERING LITERACY
NAEP 2014

Sample Scenarios for the 2014 National Assessment of Educational Progress (NAEP) Technology and Engineering Literacy Framework and Test Item Specifications

This set of example videos demonstrates the types of interactivity and functionality of tools that students might be expected to use as they respond to short and long scenarios that will be developed for the Technology and Engineering Literacy Assessment. Long scenarios can be created by increasing the complexity of the task in a short scenario so that students need to complete several steps to respond to it. Conversely, short scenarios might be created from a long scenario by breaking the series of steps in the long task into discrete, shorter ones. The content of the examples is not meant to represent the content that will be assessed.

Click on an image to view each example.

Ecosystems:

In this scenario students observe organisms interacting in an ecosystem. The tasks were designed for grade 8. In the NAEP Technology and Engineering Literacy Assessment, students might investigate how organisms in an ecosystem are affected by a pollutant

Force & Motion:

In this scenario students use simulations in a problem solving activity. While designed for middle school science, such a simulation could be adapted for the NAEP Technology and Engineering Literacy Assessment to study how the design of the technological system (transportation) affects the environment positively by making it possible to contain forest fires and rescue people and also negatively because of the cutting of trees and the disruption of wildlife habitat.

Population Data:

In this scenario a population of small birds—chortlers—is declining. Students are asked to use various tools to analyze data to determine possible causes for the population decrease and present findings on the impacts on the chortlers.

Plant Growth:

In this scenario students use their knowledge about the engineering design process and various tools to explore the factors that affect plant growth in a greenhouse. In the NAEP Technology and Engineering Literacy Assessment, students might be asked to evaluate different greenhouse designs.

http://www.nagb.org/assets/documents/publications/frameworks/tech2014-framework/ch_video/index.html

Long-term Trend (LTT)

- LTT assessments are designed to give information on the changes in the basic achievement of America's youth in reading and mathematics from 1969 to the present.
- LTT is administered nationally and reports student performance at ages 9, 13, and 17.

High School Transcript Study (HSTS)

What is the High School Transcript Study?

The High School Transcript Study (HSTS) collects and analyzes transcripts from a representative sample of America's public and private high school graduates. The study is designed to inform the public about the types of courses that graduates take during high school, how many credits they earn, and their grade point averages (GPAs). The HSTS also explores the relationship between course-taking patterns and student achievement, as measured by the National Assessment of Educational Progress (NAEP). High school transcript studies have been conducted periodically for nearly two decades, permitting the reporting of trends in coursetaking and GPA as well as providing information about recent high school graduates. In addition to collecting transcripts, the HSTS collects student information such as gender, graduation status, and race/ethnicity and information about the schools studied.

HSTS

- Conducted during the summer of every 4th odd-numbered year.
- Westat staff will revisit the 110 grade 12 schools that are in Florida's 2013 NAEP sample to obtain final transcripts of graduating seniors who participated in the assessment.
- Because transcripts for HSTS are collected from the same students in the same sample of schools in which the NAEP grade 12 assessments are given, the results from the HSRS and NAEP assessment can be linked.

Analysis and Reporting

NAEP reports results by average scale scores and by achievement levels:

- **Average Scale Scores**
  - Reading and Mathematics, 0 - 500
  - Science and Writing, 0 – 300
- **Achievement Level Scores**
  - *Advanced* – superior performance
  - *Proficient* – solid academic performance demonstrating competency over challenging subject matter
  - *Basic* – partial mastery of prerequisite knowledge and skills that are fundamental for proficient work

(Below Basic - not an achievement level but reports scale scores that represent incomplete knowledge and skills necessary for proficient work)

Proficient vs. Proficiency

The definitions of "proficient" set by states and by NAEP have no observable agreement.*

* Robert Linn, Large-Scale Assessment Conference, San Antonio, TX, June 2005
Robert Linn is a distinguished professor emeritus of education in the research and evaluation methods program at the University of Colorado at Boulder.

Sampling

- NAEP uses a complicated Multi-Stage Stratified Random Sampling method.

- Schools are grouped by type of location and minority enrollment and then ordered by a measure of achievement.

- A proportional sample is then selected that is representative of the entire student population. Sample includes students with disabilities (SD) and English language learners (ELLS).

- Larger schools that educate more students and are ethnically diverse have a higher chance of being selected for NAEP than does a small school.

How Does Florida's Population Differ from the Nation's?

	Florida	National Public
White 2009	46%*	56%
White 2011	45%*	54%
Hispanic 2009	26%*	21%
Hispanic 2011	27%*	22%
African-American 2009	22%*	16%
African-American 2011	22%*	16%
NSLP 2009	48%*	43%
NSLP 2011	55%*	48%
SD 2009	14%*	11%
SD 2011	14%*	11%
ELL 2009	4%*	5%
ELL 2011	4%*	6%

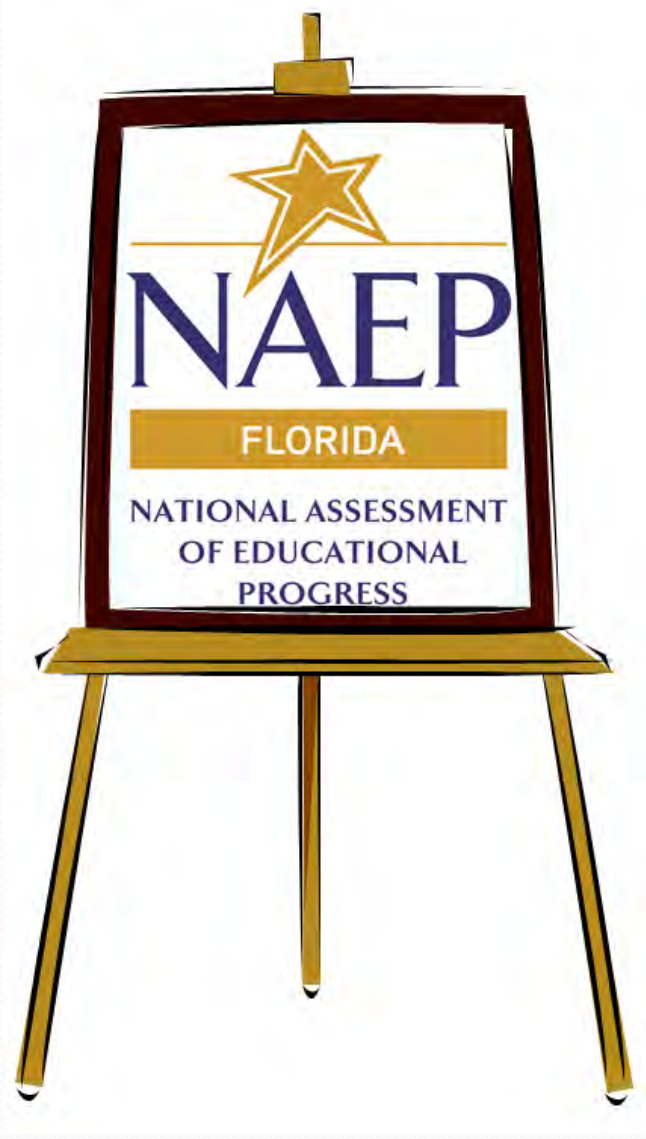
*Significantly different from National Public

NAEP Inclusions and Accommodations

- Prior to 1998, NAEP did not provide accommodations for Students with Disabilities (SD) and English Language Learners (ELL).
- On March 6, 2010, NAGB adopted a policy requiring states to assess 95% of the students selected for the sample and at least 85% of the SD and ELL included in the sample.
- NAEP's most frequent accommodations include:
  - Extra testing time
  - Individual or small-group administrations
  - Large-print booklets
  - Heritage language, word-to-word dictionaries

- NAEP accommodations do *not* include:
  - Reading passages or questions aloud on the NAEP reading assessment
  - Using heritage language, word-to-word dictionaries on the reading assessment

For additional information on NAEP accommodations for SDs and ELLs access http://nces.ed.gov/nationsreportcard/about/inclusion.asp



NAEP 2011 Grade 8 Science Results

Snapshot Report

The Nation's Report Card **Science** 2011 State Snapshot Report

Florida
Grade 8
Public Schools

Overall Results

- In 2011, the average score of eighth-grade students in Florida was 148. This was lower than the average score of 151 for public school students in the nation.
- The average score for students in Florida in 2011 (148) was not significantly different from their average score in 2009 (146).
- In 2011, the score gap between students in Florida at the 75th percentile and students at the 25th percentile was 47 points. This performance gap was not significantly different from that of 2009 (45 points).
- The percentage of students in Florida who performed at or above the NAEP *Proficient* level was 28 percent in 2011. This percentage was not significantly different from that in 2009 (25 percent).
- The percentage of students in Florida who performed at or above the NAEP *Basic* level was 62 percent in 2011. This percentage was greater than that in 2009 (57 percent).

Achievement-Level Percentages and Average Score Results

* Significantly different ($p < .05$) from state's results in 2011. Significance tests were performed using unrounded numbers.

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

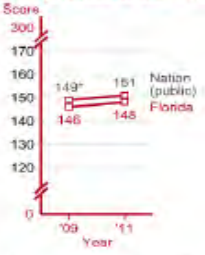
Compare the Average Score in 2011 to Other States/Jurisdictions

¹ Department of Defense Education Activity (overseas and domestic schools).

In 2011, the average score in Florida (148) was

- lower than those in 29 states/jurisdictions
- higher than those in 9 states/jurisdictions
- not significantly different from those in 13 states/jurisdictions

Average Scores for State/Jurisdiction and Nation (public)



* Significantly different ($p < .05$) from 2011. Significance tests were performed using unrounded numbers.

Results for Student Groups in 2011

Reporting Groups	Percent of students	Avg. score	Percentages at or above Basic	Percentages at or above Proficient	Percent at Advanced
Race/Ethnicity					
White	45	161	77	39	2
Black	22	127	34	9	#
Hispanic	27	144	57	24	1
Asian	3	161	77	45	1
American Indian/Alaska Native	#	‡	‡	‡	‡
Native Hawaiian/Pacific Islander	#	‡	‡	‡	‡
Two or more races	3	154	67	35	#
Gender					
Male	51	150	63	31	2
Female	49	147	61	26	1
National School Lunch Program					
Eligible	55	138	49	18	#
Not eligible	45	162	78	41	2

Rounds to zero. ‡ Reporting standards not met.

NOTE: Detail may not sum to totals because of rounding, and because the "information not available" category for the National School Lunch Program, which provides free/reduced-price lunches, is not displayed. Black includes African American and Hispanic includes Latino. Race categories exclude Hispanic origin.

Score Gaps for Student Groups

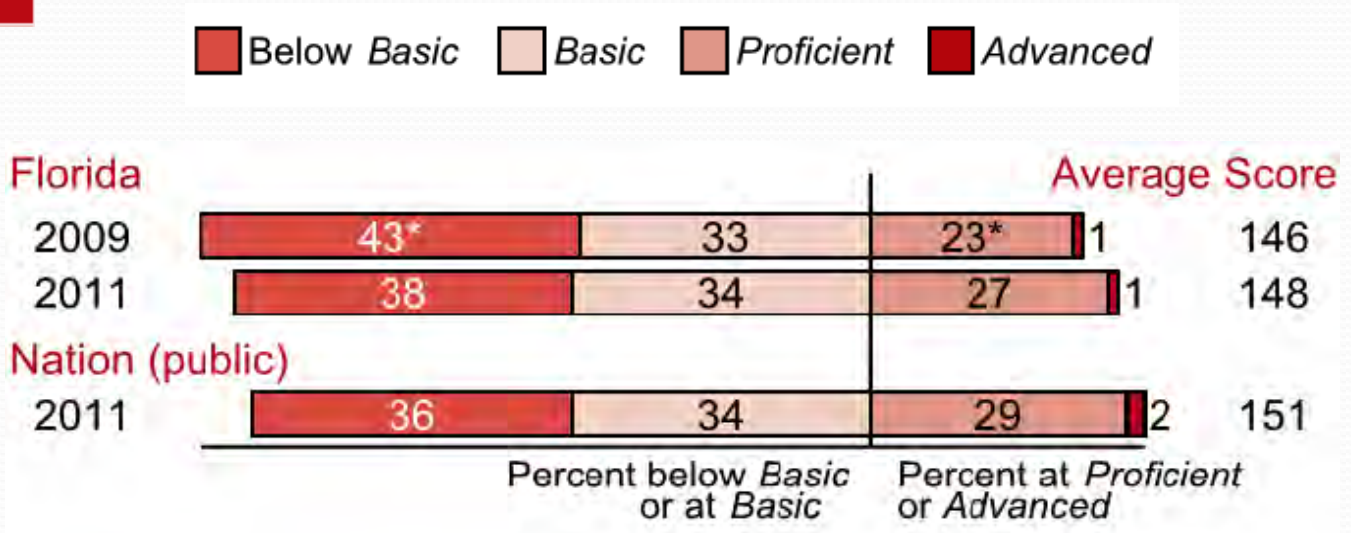
- In 2011, Black students had an average score that was 34 points lower than White students. This performance gap was not significantly different from that in 2009 (32 points).
- In 2011, Hispanic students had an average score that was 17 points lower than White students. This performance gap was not significantly different from that in 2009 (19 points).
- In 2011, male students in Florida had an average score that was not significantly different from female students.
- In 2011, students who were eligible for free/reduced-price school lunch, an indicator of low family income, had an average score that was 24 points lower than students who were not eligible for free/reduced-price school lunch. This performance gap was not significantly different from that in 2009 (22 points).

NOTE: Statistical comparisons are calculated on the basis of unrounded scale scores or percentages.
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2009 and 2011 Science Assessments.

The Nation's Report Card Science 2011 State Snapshot Report

Florida
Grade 8
Public Schools

Achievement Level Percentages and Average Scale Scores



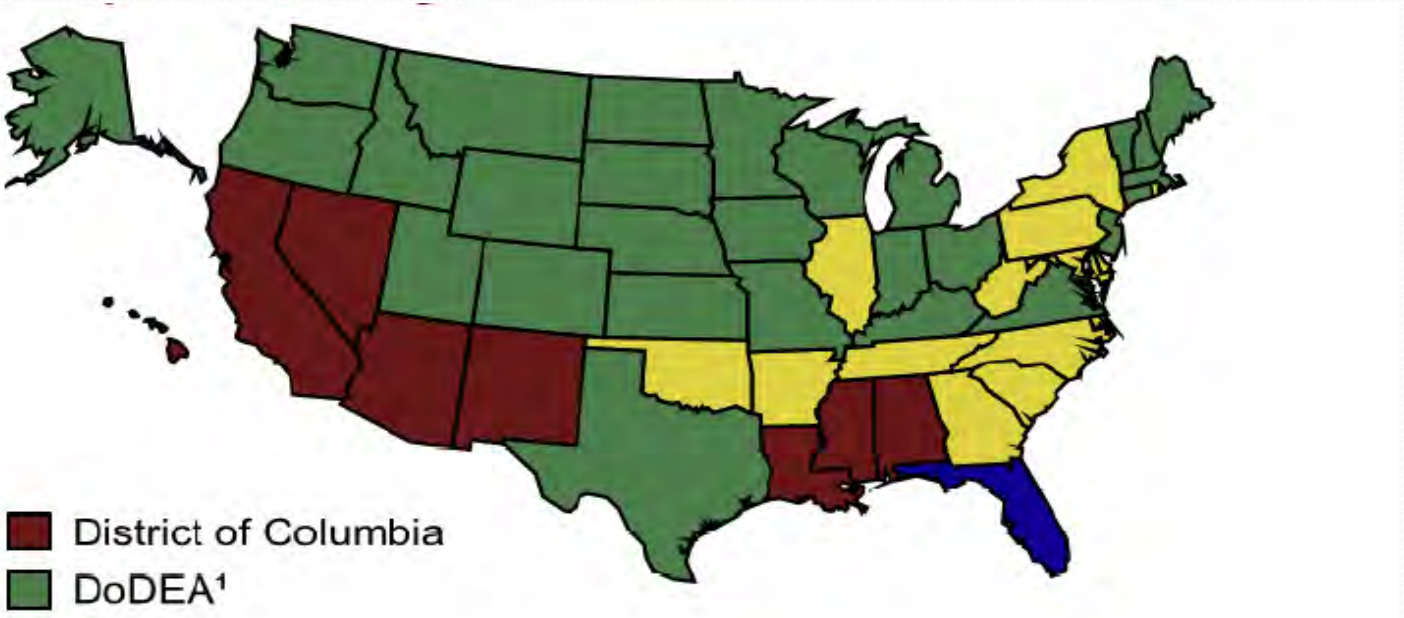
* Significantly different ($p < .05$) from state's results in 2011. Significance tests were performed using unrounded numbers.

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

The Nation's Report Card Science 2011 State Snapshot Report

Comparison of Florida's Average Scale Score in 2011 to Other States/Jurisdictions

Florida
Grade 8
Public Schools



[1] Department of Defense Education Activity (overseas and domestic schools).

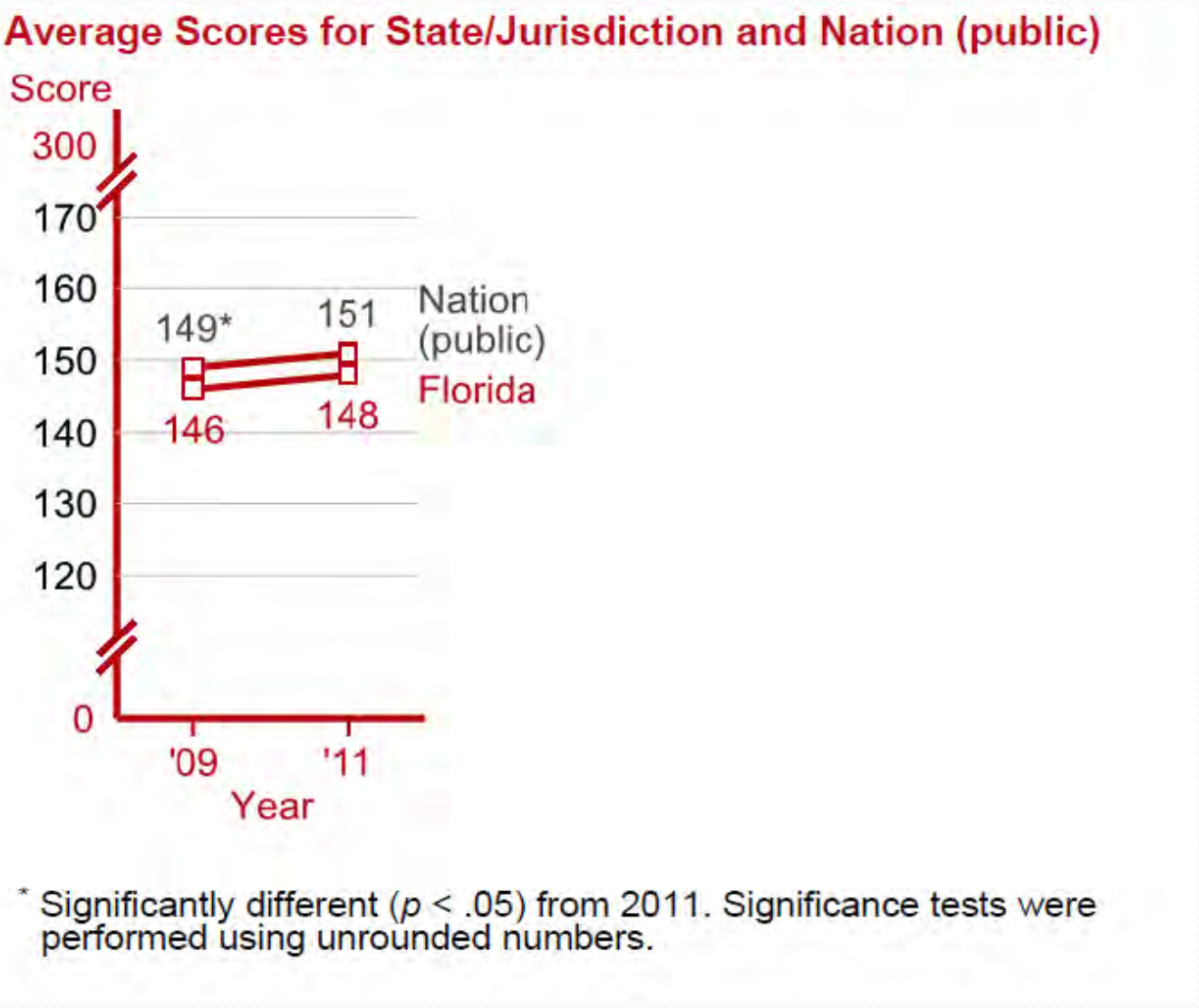
In 2011, the average score in **Florida** (148) was

- lower than those in 29 states/jurisdictions
- higher than those in 9 states/jurisdictions
- not significantly different from those in 13 states/jurisdictions

The Nation's Report Card Science 2011 State Snapshot Report

Florida
Grade 8
Public Schools

In 2009 and 2011 Florida's average scale score was significantly lower than the Nation (public).



The Nation's Report Card **Science** 2011 State Snapshot Report

Florida
Grade 8
Public Schools

Results for Student Groups in 2011

Reporting Groups	Percent of students	Avg. score	Percentages at or above *Basic*	*Proficient*	Percent at *Advanced*
Race/Ethnicity					
White	45	161	77	39	2
Black	22	127	34	9	#
Hispanic	27	144	57	24	1
Asian	3	161	77	45	1
American Indian/Alaska Native	#	‡	‡	‡	‡
Native Hawaiian/Pacific Islander	#	‡	‡	‡	‡
Two or more races	3	154	67	35	#
Gender					
Male	51	150	63	31	2
Female	49	147	61	26	1
National School Lunch Program					
Eligible	55	138	49	18	#
Not eligible	45	162	78	41	2

Rounds to zero. ‡ Reporting standards not met.

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Grade 8 Science 2009 and 2011

	Overall/Subgroups	2009	2011	2009	2011	2009	2011
Average Scale Scores and Percentiles	Overall	146	148	<	<	149	151^
	White	158	161	<	=	161	163^
	Hispanic	139	144	>	>	131	136^
	African-American	126	127	=	=	125	128^
	Asian/Pacific Islander	163	161	=	=	159	159
	Male	148	150	<	<	151	153^
	Female	144	147	<	=	147	148^
	Eligible NSLP	135	138	=	=	133	137^
	Not Eligible NSLP	156	162^	<	=	161	164^
	SD - Yes	122	125	>	=	120	122
	ELL - Yes	106	101	=	=	103	106
	Gaps—Average Scale Scores						
	White/Hispanic	19	17	<	<	30	27^
	White/African-American	32	34	<	=	36	35
	Male/Female	4	3	=	=	4	5
	Overall Percentiles						
	90th	188	190	<	=	191	192
	75th	170	173	<	=	174	175^
	50th	147	152^	<	=	152	154^
	25th	124	126	<	=	127	129^

Legend

2009 and 2011 Florida-Florida and Nation-Nation Comparisons

^ Statistically different from 2009

‡ Reporting standards not met

† Florida's gap smaller than the nation's gap for that year

2009 and 2011 Florida-National Comparisons

> Florida significantly higher than the nation's public schools

= No significant difference between Florida and the nation's public schools

< Florida significantly lower than the nation's public schools

http://www.fldoe.org/asp/naep/naep2011science.asp

Grade 8 Science 2009 and 2011

Achievemnt Levels

Percentage at or above *Basic*	FLORIDA 2009	FLORIDA 2011	FL Compared to Nation 2009	FL Compared to Nation 2011	NATIONAL PUBLIC 2009	NATIONAL PUBLIC 2011
Overall	57%	62%^	<	=	62%	64%^
White	72%	77%	<	=	77%	79%^
Hispanic	51%	57%	>	>	41%	48%^
African-American	32%	34%	=	=	32%	36%^
Asian/Pacific Islander	79%	77%	=	=	72%	74%
Male	59%	63%	<	<	64%	66%^
Female	56%	61%	<	=	60%	62%^
Eligible NSLP	44%	49%	=	=	43%	48%^
Not Eligible NSLP	70%	78%^	<	=	76%	80%^
SD - Yes	29%	34%	=	=	30%	32%
ELL - Yes	15%	16%	=	=	14%	17%
Gaps—percentage at or above Basic						
White/Hispanic	21%	20%	<	<	36%	31%^
White/African-American	40%	43%	=	=	45%	43%
Male/Female	3%	2%	=	=	4%	4%
Percentage at or above *Proficient*						
Overall	25%	28%	<	=	29%	31%^
White	36%	39%	<	=	41%	43%^
Hispanic	17%	24%	>	>	12%	16%^
African-American	7%	9%	=	=	8%	9%^
Asian/Pacific Islander	40%	44%	=	=	40%	41%
Male	28%	31%	<	=	32%	34%^
Female	21%	26%	<	=	26%	27%^
Eligible NSLP	13%	18%^	=	=	14%	16%^
Not Eligible NSLP	35%	41%^	<	=	41%	44%^
SD - Yes	6%	12%	=	=	9%	10%
ELL - Yes	2%	2%	‡	‡	2%	2%
Gaps—percentage at or above *Proficient*						
White/Hispanic	19%	15%	<	<	29%	27%
White/African-American	29%	30%	=	=	33%	34%
Male/Female	7%	5%	=	=	6%	7%

Legend

2009 and 2011 Florida-Florida and Nation-Nation Comparisons

^ Statistically different from 2009

‡ Reporting standards not met

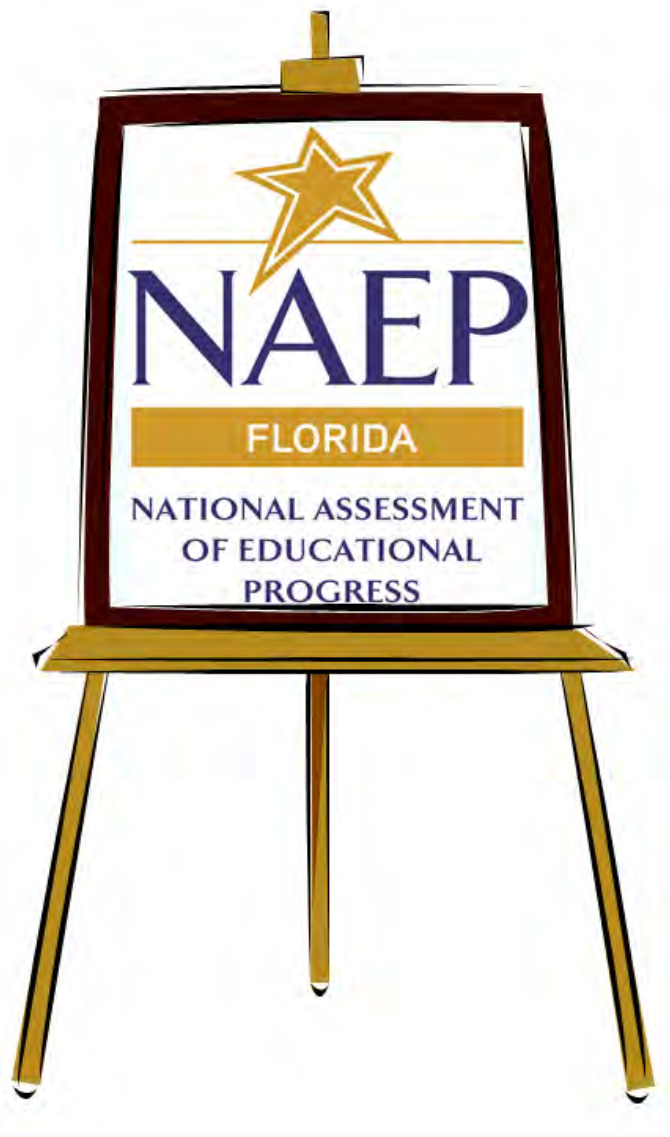
2009 and 2011 Florida-National Comparisons

> Florida significantly higher than the nation's public schools

= No significant difference between Florida and the nation's public schools

< Florida significantly lower than the nation's public schools

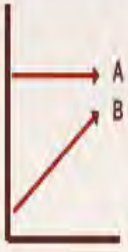
"Percent at or above *Basic*" is the NAEP statistic that is most directly comparable to the AYP statistic states report for NCLB.



Achievement Gaps
Grade 8
Science

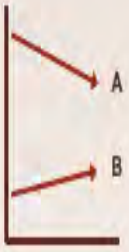
Ways Gaps Can Narrow

The average scores of *both* groups increase, while the score of the lower performing group increases even more.



The average scores of the *higher* performing group does not change, while the score of the lower performing group increases.

The average scores of *both* groups do not change, but the gap narrows.



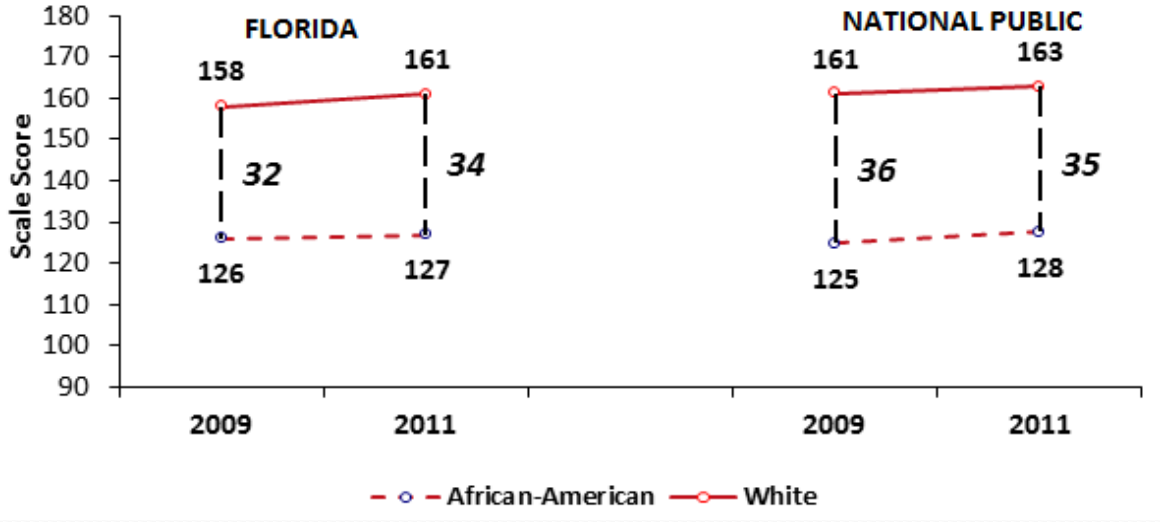
The average scores of the *higher* performing group declines, while the score of the lower performing group increases.

The average scores of the *higher* performing group declines, while the score of the lower performing group does not change.

The average scores of *both* groups decline, but the score of the higher performing group declines even more.

Gaps in Average Scale Scores

NAEP 2011 Science, Grade 8
Florida compared to National Public
White/African-American
Average Scale Scores



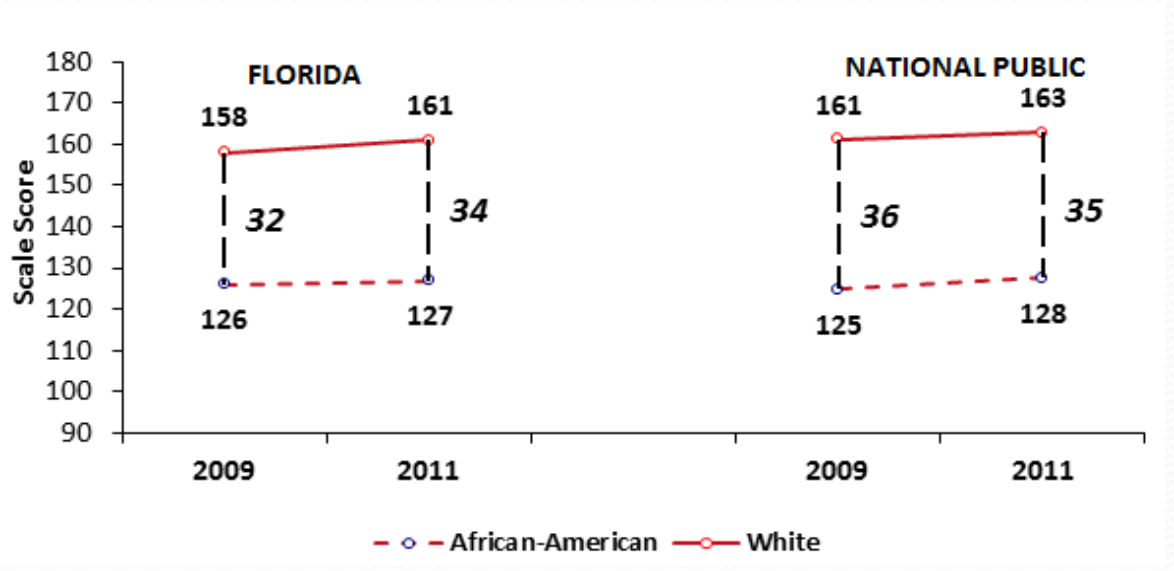
Scores can be compared in 5 ways:

1. Were the gains (or losses) in scores between 2009 and 2011 significant for Florida (FL) and for the National Public (NP) White (W) and African-American (AA) students?
    1. **FL W – 158 to 161 not sig dif; NP W – 161 to 163 stat sig increase**
    2. **FL AA – 126 to 127 not sig dif; NP AA – 125 to 128 stat sig increase**
2. Did FL W and/or AA students score significantly higher (or lower) than the NP's in 2011?
    1. **FL W not sig dif from NP W in 2011 (161 vs. 163)**
    2. **FL AA not sig dif from NP AA in 2011 (127 vs. 128)**

not sig dif= not significantly different
stat sig = statistically significant

Gaps in Average Scale Scores

NAEP 2011 Science, Grade 8
Florida compared to National Public
White/African-American
Average Scale Scores



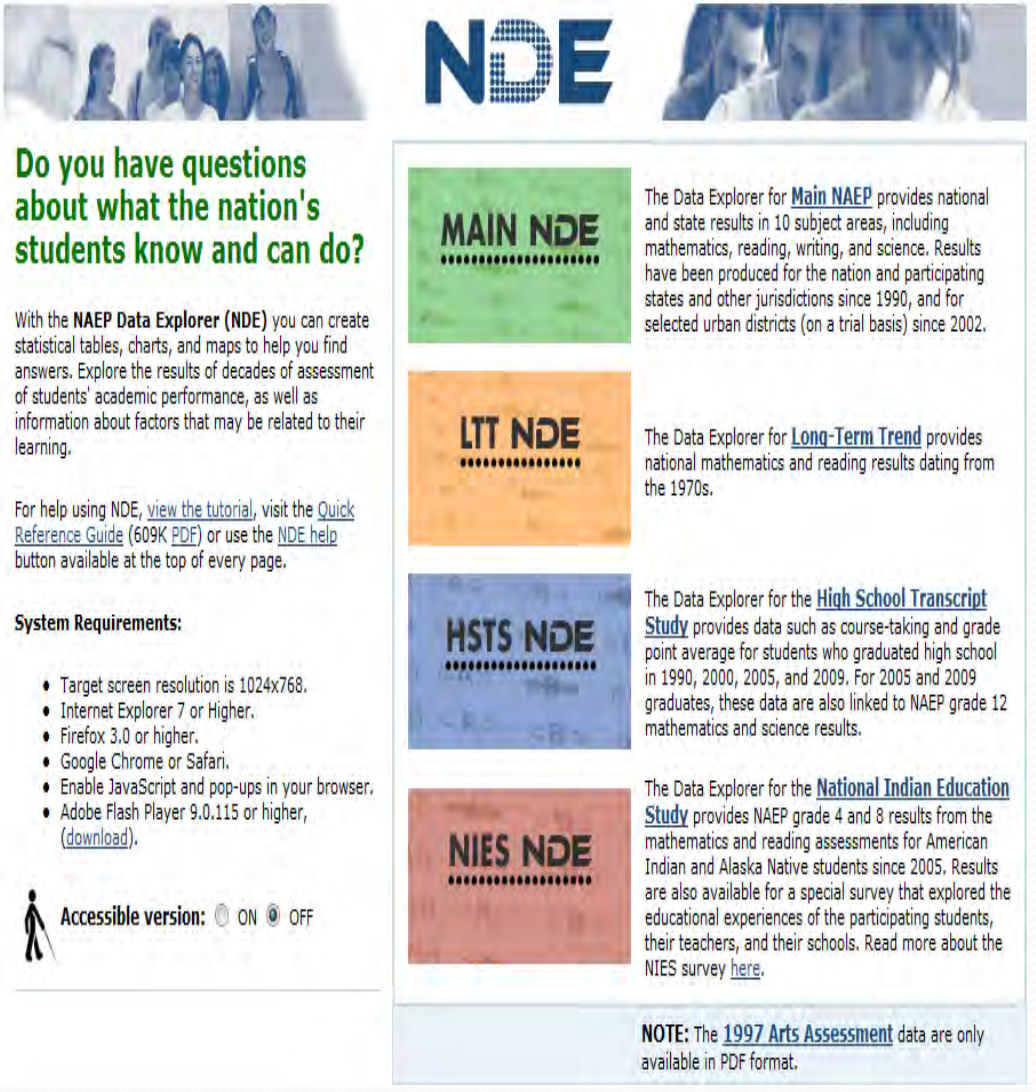
Scores can be compared in 5 ways (continued):

3. Was the change in FL scores for W or AA students between 2009 and 2011 significantly greater (or smaller) than the change in the NP scores?
   1. **FL W change of 3 pts between 2009 and 2011 not sig dif from NP W change of 2 pts**
   2. **FL AA change of 1 pt between 2009 and 2011 not sig dif from NP AA change of 3 pts**
4. Did the gap between FL's and the NP W and AA students narrow (or widen) between 2009 and 2011?
   1. **2 pt change in gap between FL W and AA students between 2009 and 2011 not significant**
   2. **1 pt change in gap between NP W and AA between 2009 and 2011 not significant**
5. Was the difference in the change of the gap between FL's and the NP W and AA students significant? **No sig dif between 2 and 1 pt change in gaps**

NAEP Data Explorer

http://nces.ed.gov/nationsreportcard/naepdata/

- Analyzes NAEP data
- Creates statistical tables and graphs
- Examines state performance over time
- Examines subgroup performance
- Compares Florida's results to the nation's and other states'
- Compares Miami-Dade and Hillsborough County results to those of the other TUDAs and Large Cities



Quick Reference Guide to NAEP Data Explorer (NDE)

NAEP
NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS

NAEP Data Explorer

WHAT IS THE NAEP DATA EXPLORER?

The NAEP Data Explorer (NDE) is a dynamic, interactive tool used to explore assessment results for various subjects, grades, and jurisdictions. It allows users to create custom statistical tables, graphics, and maps using NAEP data. Student performance in the context of gender, race/ethnicity, public or private school, teacher experience, and hundreds of other factors can be examined using data gathered from students, teachers, and schools that have participated in NAEP.

WHAT CAN I USE IT FOR?

The NDE is a powerful statistical tool that encompasses many analytical functions, such as sophisticated searching, data comparison, and chart and table creation. The NDE is easy to use, whether you are looking for single-year data or conducting a cross-tabulation. Get the data you want, how and when you want it.

How Do I Access the NDE?

1. You can access the NDE by visiting http://nces.ed.gov/nationsreportcard/naepdata or by clicking Analyze Data on the NAEP home page at http://nces.ed.gov/nationsreportcard.
2. Select the database you want and start exploring!
   - **Main NAEP** provides national results for various subject areas since 1990. State and selected urban district results are provided since 2002 in mathematics, reading, science, and writing.
   - **Long-Term Trend** provides national data on 9-, 13-, and 17-year-olds for reading since 1971 and mathematics since 1978.
   - **High School Transcript Study** provides national results for graduating seniors on NAEP assessments in science and reading. Results are also available for transcript data, such as courses taken and grade point average.

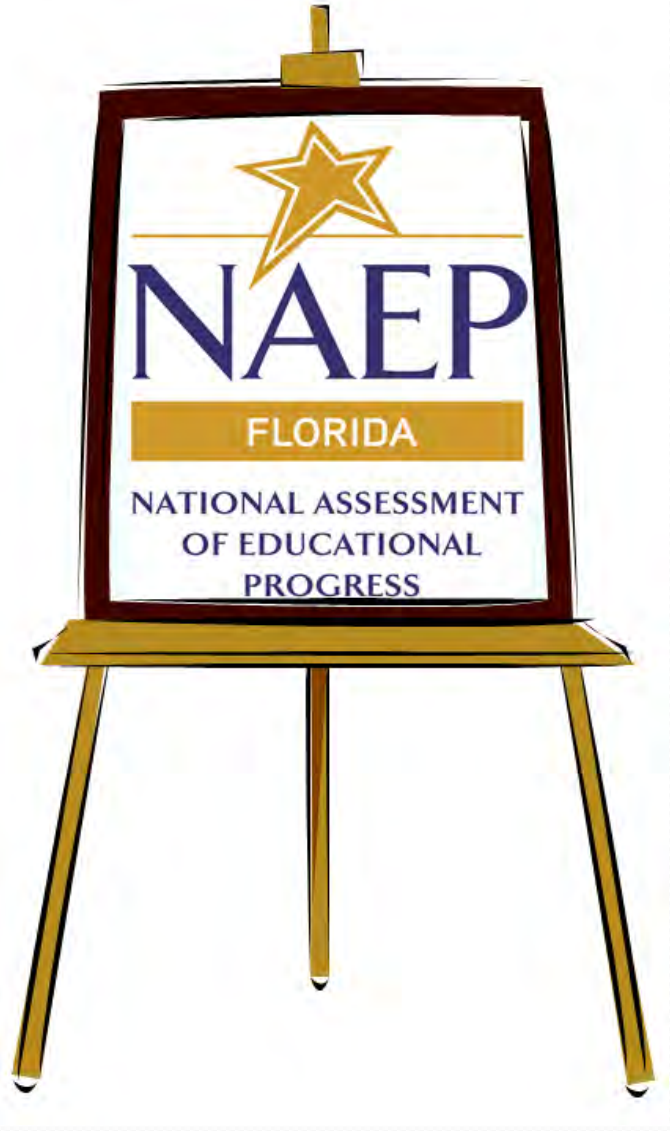
How Do I Use It?

There are four sections for each version of the NDE, which allow you to narrow your results and build customized reports.

1. **Select Criteria**
   - Choose criteria for analysis, such as subject, grade, year, measure, jurisdiction, and in certain cases, framework.
2. **Select Variables**
   - Choose variables in the areas of major reporting groups; instructional content and practice; and student, teacher, and community factors.

TIP: You can also search for variables using keywords.

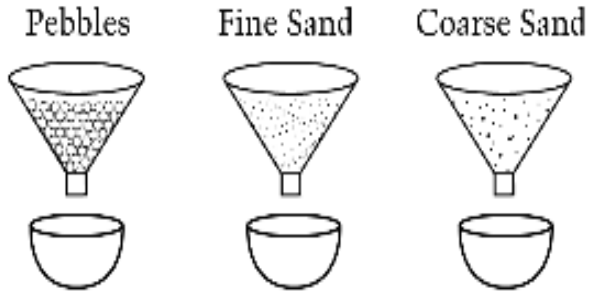
3. **Edit Reports**
   - Give the report a title, select various format and statistical options, and custom design the layout.
4. **Build Reports**
   - Preview data tables.
   - Create a chart or run a significance test or gap analysis on your results.



NAEP Released Test Items - A Valuable Resource for Teachers

Grade 8 Earth and Space Sciences

Three funnels were filled with equal volumes of pebbles, fine sand, and coarse sand, as shown in the diagram below. The same amount of water was poured into each funnel.



Which correctly lists the order in which the water passed through the funnels, from fastest to slowest?

a. Pebbles, fine sand, coarse sand
b. Pebbles, coarse sand, fine sand
c. Fine sand, coarse sand, pebbles
d. Coarse sand, pebbles, fine sand

Description: Order soils in terms of permeability
Difficulty: Medium
Science Practices: Using Science Principles

Grade 8 Earth and Space Sciences

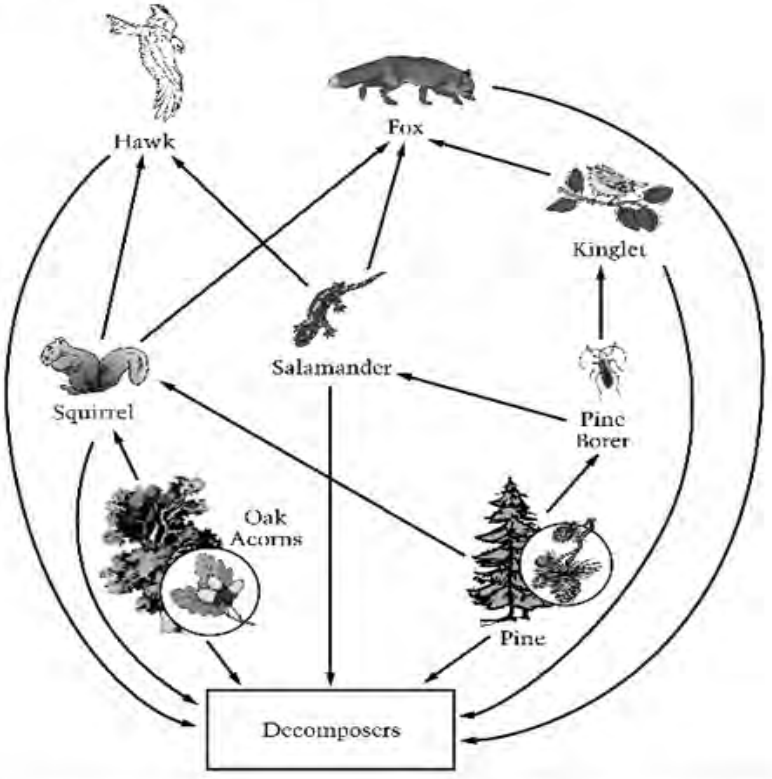
B is the Correct Answer

Why might students choose *C*?

Answers	Percent chosen by Florida's participating students
*B	40%
A	21%
C	38%
D	2%
Omitted	1%

Grade 8 Life Science

The arrows in the food web diagram below show the direction of energy flow. Each arrow points from the organism that is consumed to the organism that consumes it. Use the information in the food web to answer the question that follows.



Which statement best explains why decomposers are an important part of this food web?

a. They use sunlight to make their own food.
b. They give off oxygen for animals to breathe.
c. They provide camouflage for small animals.
d. They make nutrients available to plants.

Description: Recognize the role of decomposers
Difficulty: Easy
Science Practices: Identifying Science Principles

Grade 8 Life Science

D is the Correct Answer

Answers	Percent chosen by Florida's participating students
*D	68%
A	11%
B	15%
C	5%
Omitted	1%

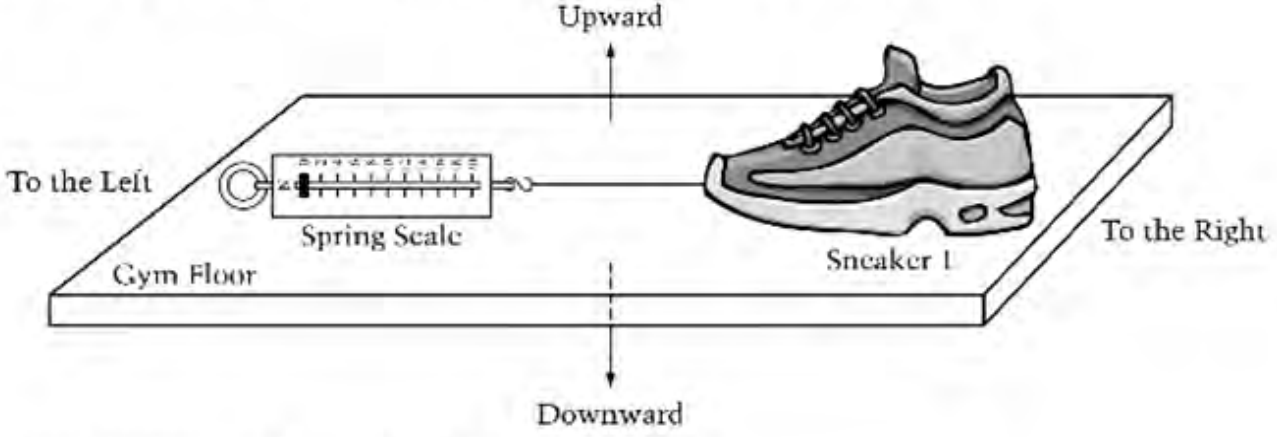
Grade 8 Physical Science

Cesar designs an experiment to see which types of sneakers provides the most friction. He uses the equipment listed below.

a. Sneaker 1
b. Sneaker 2
c. Sneaker 3
d. Spring scale

Description: Recognize the direction of force of friction
Difficulty: Hard
Science Practices: Identifying Science Principles

He uses the setup illustrated below and pulls the spring scale to the Left.



In what direction does the force of friction act?

a. To the left
b. To the right
c. Upward
d. Downward

Grade 8 Physical Science

B is the Correct Answer

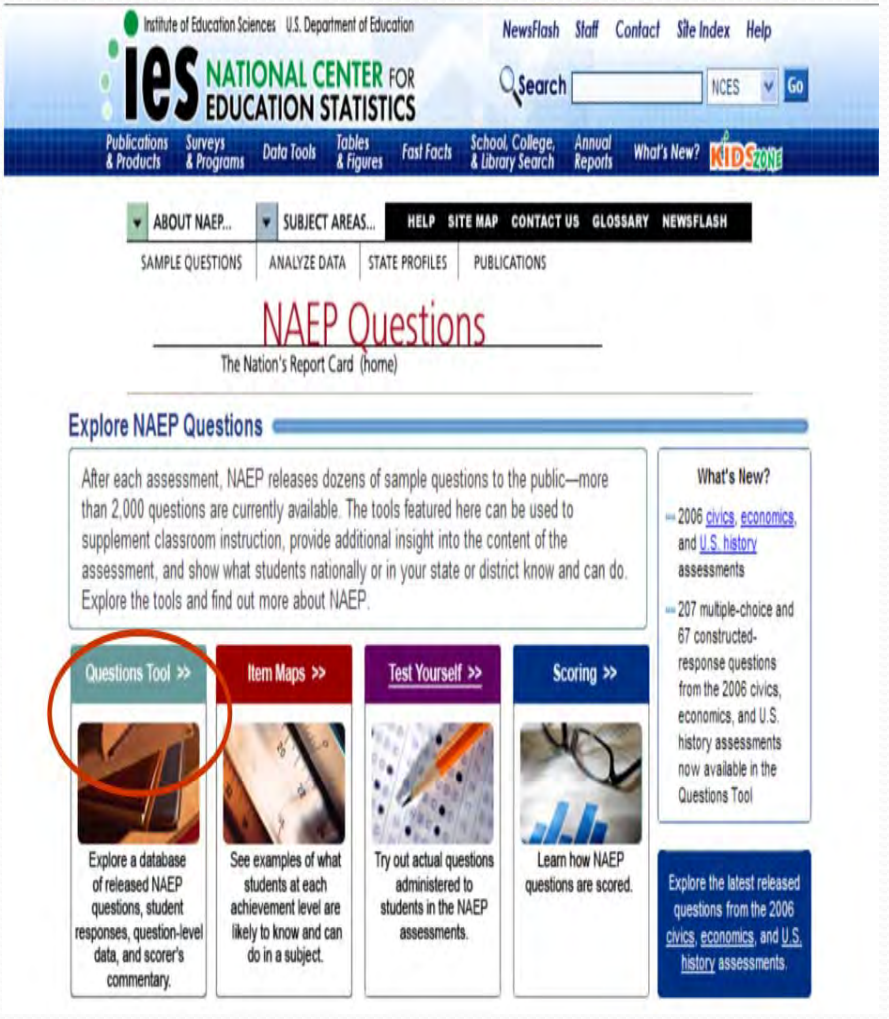
Why might students choose A?

Answers	Percent chosen by Florida's participating students
*B	35%
A	42%
C	9%
D	13%

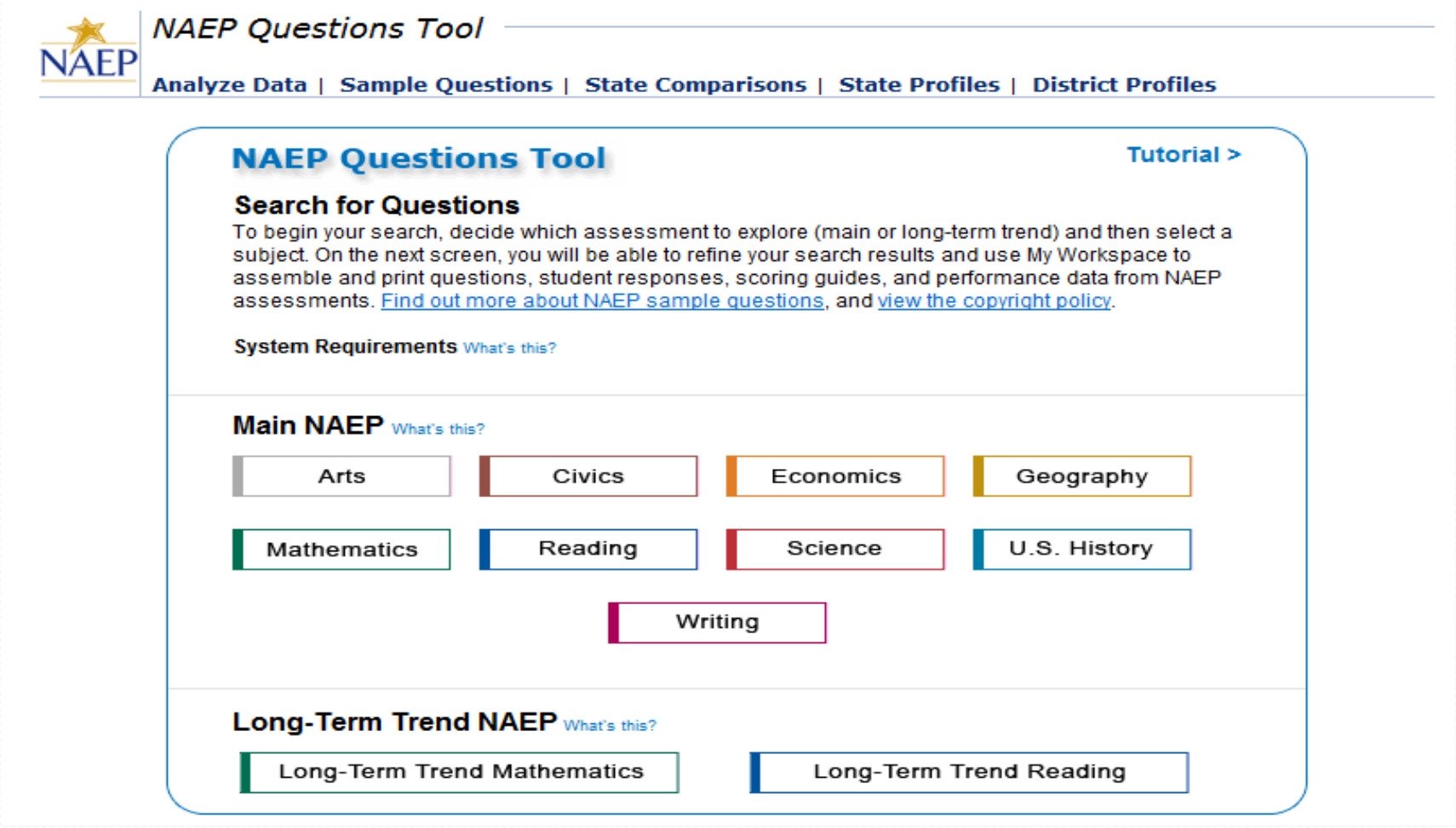
NAEP Questions Tool

http://nces.ed.gov/nationsreportcard/itmrls

- Contains over 1,000 released items from many content areas
- Sorts items by domains, objectives, cognitive ability, and difficulty level
- Includes multiple-choice and both short- and extended-response items
- Reports student performance on a specific question by states and subgroups



NAEP Questions Tool



Searching for Questions

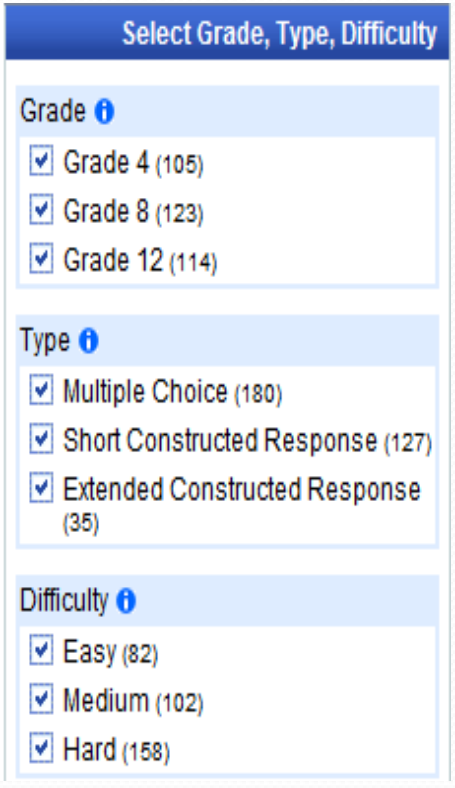
Search Results (342 of 342) | My Workspace (0)

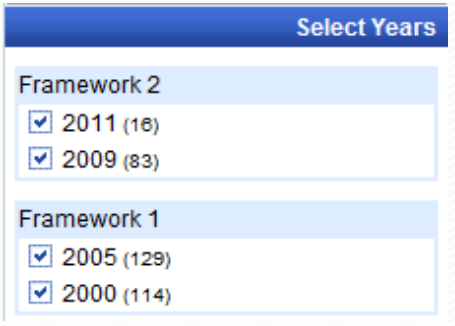
Add All Questions | Remove All Questions | Print/Save List | Show/Hide

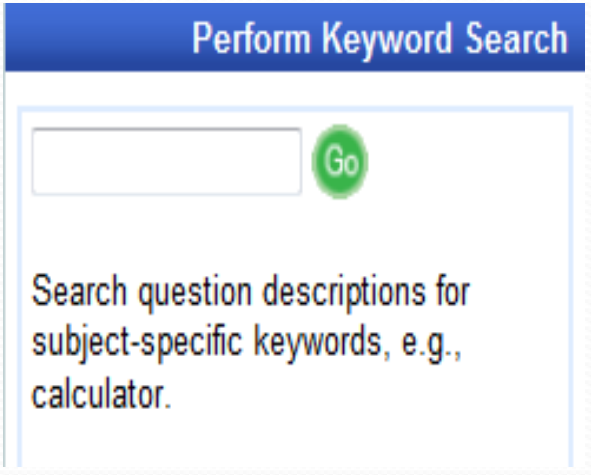
Year	Grade	Block	#	Type	Difficulty	Description
2011	8	S11	2	MC	Medium	Identify the atomic components of the molecule
2011	8	S11	3	MC	Medium	Identify a characteristic of all cells
2011	8	S11	4	MC	Hard	Identify chemically similar elements in the Periodic Table
2011	8	S11	5	ECR	Easy	Draw a representation of part of the solar system
2011	8	S11	6	SCR	Hard	Draw a conclusion about soil permeability using data
2011	8	S11	7	SCR	Hard	Explain how particle size affects permeability
2011	8	S11	8	SCR	Hard	Explain the cause of a change in soil permeability
2011	8	S11	9	MC	Hard	Explain why seismic activity occurs near the fault
2011	8	S11	10	SCR	Hard	Form a conclusion based on data about the behavior of an organism
2011	8	S11	11	ECR	Hard	Select and explain graph types and draw graphs from data that compare insect behavior
2011	8	S11	12	MC	Easy	Predict the effect of an environmental change on an organism
2011	8	S11	13	MC	Medium	Identify what type of energy moves muscles
2011	8	S11	14	SCR	Hard	Identify and explain the most recent rock formation
2011	8	S11	15	MC	Medium	Identify a source of energy for Earth's water cycle
2011	8	S11	16	MC	Medium	Predict a lunar phenomenon
2009	4	S7	1	MC	Easy	Identify the organism with a change in habitat from young to adult
2009	4	S7	2	MC	Easy	Identify the best tool to measure rainfall

View Question Detail

Refining Search







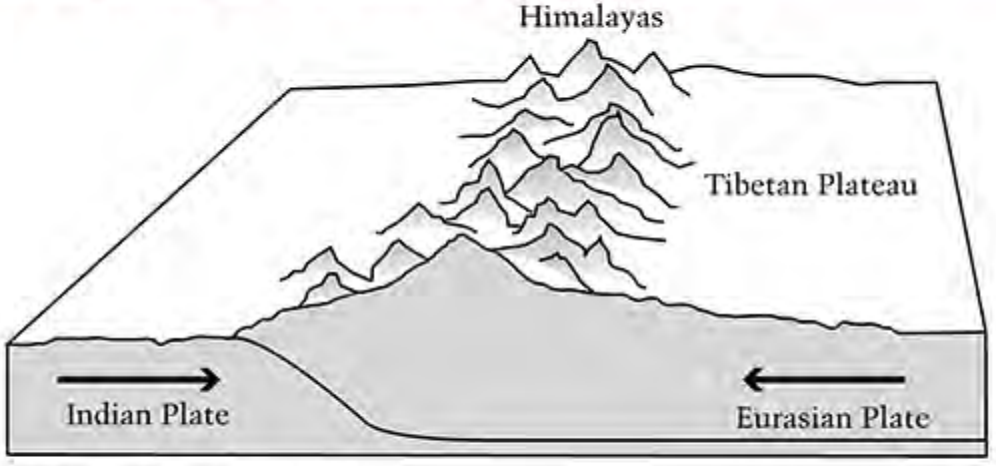
Questions

Question Information

- **Description:** Predict a geological consequence of tectonic plate movement
- **Grade:** 8
- **Year:** 2011
- **Block & Number:** Block S11 Question #1
- **Type of Question:** Multiple Choice
- **Difficulty:** Easy (71.84% Correct)
- **Content Classification:**
  - **Content Area:** Earth and Space Sciences
  - **Science Practices (2009 and on):** Using Science Principles

Question | Key/Scoring Guide | National Data | Jurisdiction Data

1. The diagram below shows the collision of two tectonic plates in Asia.



What is a result of this collision?

A. Volcanoes erupt periodically.
B. The Tibetan Plateau slowly sinks.
C. The Himalayas increase in height each year.
D. Glaciers on the Tibetan Plateau melt.

Quick Reference Guide to NAEP Questions Tool (NQT)

NAEP
NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS

NAEP Questions Tool

WHAT IS THE NAEP QUESTIONS TOOL?

The NAEP Questions Tool (NQT) is a database of more than 2,000 questions, in nine subject areas, from past assessments that have been released to the public and will not be used again on NAEP assessments. The NQT allows you to search for questions by subject, grade, difficulty, and other characteristics; view student responses; create customized reports, and more. You can also view scoring guides and performance data, such as the percentage of students nationwide and in your state who answered a question correctly, for most questions.

How Do I Access the NQT?

There are two ways to access the NQT:

- You can access the NQT directly by visiting http://nces.ed.gov/nationsreportcard/itmrlsx.
- Or, from the NAEP home page (http://nces.ed.gov/nationsreportcard) by clicking Sample Questions and then selecting Questions Tool.

Searching for Questions

Select a subject to begin your search.

You will then be directed to the Search Results window:

The window is separated into two panes (Refine Search and Search Results) to allow you to refine your search results while still viewing some question details. You can learn more about how to refine search results on the next page.

NAEP Practice Tests

http://www.fldoe.org/asp/naep/naep-pt.asp

Grade 4

- Reading (Word, 1MB)
- Mathematics (Word, 606KB)
- Science (Word, 677KB)

Grade 8

- Reading (Word, 984KB)
- Algebra (Word, 248KB)
- Data Analysis and Probability (Word, 330KB)
- Geometry (Word, 376KB)
- Measurement (Word, 444KB)
- Number Properties and Operations (Word, 250KB)
- Earth Space Sciences (Word, 416KB)
- Life Science (Word, 716KB)
- Physical Science (Word, 302KB)

Grade 12

- Reading (Word, 531KB)
- Algebra (Word, 467KB)
- Data Analysis and Probability (Word, 400KB)
- Geometry (Word, 418KB)
- Measurement (Word, 334KB)
- Number Properties and Operations (Word, 413KB)
- Earth Space Sciences (Word, 555KB)
- Life Science (Word, 723KB)
- Physical Science (Word, 328KB)

International Assessments

- Offer a unique opportunity to make international comparisons and analyze the progress of student achievement
- Determine areas of need for additional instruction
- Each assessment is based on a separate and unique framework and set of items

International Assessments

Questions	PIRLS	TIMSS	PISA
Name	Progress in International Reading Literacy Study	Trends in International Mathematics and Science	Program for International Student Assessment
What year did the study begin?	2001	1995	2000
How often is the study conducted?	Every 5 years	Every 4 years	Every 3 years
When will the study be conducted next?	2016	2015	2012
How many jurisdictions usually participate in the assessment?	58 education systems	Grade 4: 60 total Grade 8: 59 total	65 education systems
What is the target population?	Fourth-graders	Fourth- and eighth-graders	15-year-olds
How many U.S. participants were in the most recent study?	15,361	Grade 4: 17,051 Grade 8: 30,254	11,725
What is assessed?	Reading literacy	Mathematics, science	Reading, mathematical, and scientific literacy, with one subject assessed in depth at each administration (on a rotating basis) and the other two subjects as minor domains
Are state-level data available?	Yes, Florida will receive state-level data for PIRLS 2011.	For a few participating states in 1999, 2007, and 2011. For TIMSS 2011*, 9 states will receive state-level data (AL, CA, CT, CO, FL, IN, MA, MN, and	Yes, Connecticut, Florida, and Massachusetts will receive state-level data for PISA 2012
Are district-level data available?	No	For a few participating districts in 1995, 1999, and 2011. Hillsborough and Miami-Dade will receive projected TIMSS scores in mathematics	No

* The TIMSS Benchmarking studies provide an opportunity for states and school districts to assess the comparative international standing of their students' achievement. The participating states and districts administered the assessments following the same guidelines for the main TIMSS assessments, but separately from the U.S. national samples.

Link posted at http://www.fldoe.org/asp/naep/iah.asp

TIMSS, PIRLS, and PISA Participation – Race to the Top

NAEP-TIMSS Linking Study Validation States – AL, CA, CT, CO, IN, MA, MN

NAEP-TIMSS Linking Study Validation State; also participating in grade 4 state-level TIMSS – NC

NAEP-TIMSS Linking Study Validation State; also participating in grade 4 state-level TIMSS and PIRLS – FL

State-level PISA – CT, FL, and MA

TIMSS and PIRLS results will be released December 2012

PISA results will be released December 2013

Trend in International Mathematics and Science (TIMSS)

- Measures student learning in mathematics and science at grades 4 and 8 every 4 years since 1995. http://nces.ed.gov/timss/
- Administered Spring 2011
- Compares achievement of American students to that of students in more than 55 countries and jurisdictions
- For results for TIMSS 2007, go to:

http://timss.bc.edu/timss2007/sciencereport.html

http://timss.bc.edu/timss2007/mathreport.html

TIMSS Released Science Test Item Grade 8

The shape of the moon appears to change regularly during each month. Which of the following best explains why the shape of the moon appears to change?

Ⓐ The Earth turns on its axis.

Ⓑ The Moon turns on its axis.

Ⓒ The Moon orbits around the Earth.

Ⓓ Clouds cover the Moon.

Overall Percent Correct		
Hong Kong, SAR	72	▲
Malaysia	63	▲
Japan	58	▲
Singapore	58	▲
New Zealand	58	▲
Korea, Republic of	58	▲
Chinese Taipei	57	▲
Norway	56	▲
Hungary	55	▲
Estonia	54	▲
Serbia and Montenegro	54	▲
Australia	54	O
Bahrain	53	O
Sweden	53	O
Chile	53	O
Bulgaria	53	O
Scotland	53	O
Philippines	53	O
England	52	O
Egypt	52	O
United States	51	O
Armenia	51	O
Lithuania	51	O
Lebanon	50	O
International average	50	

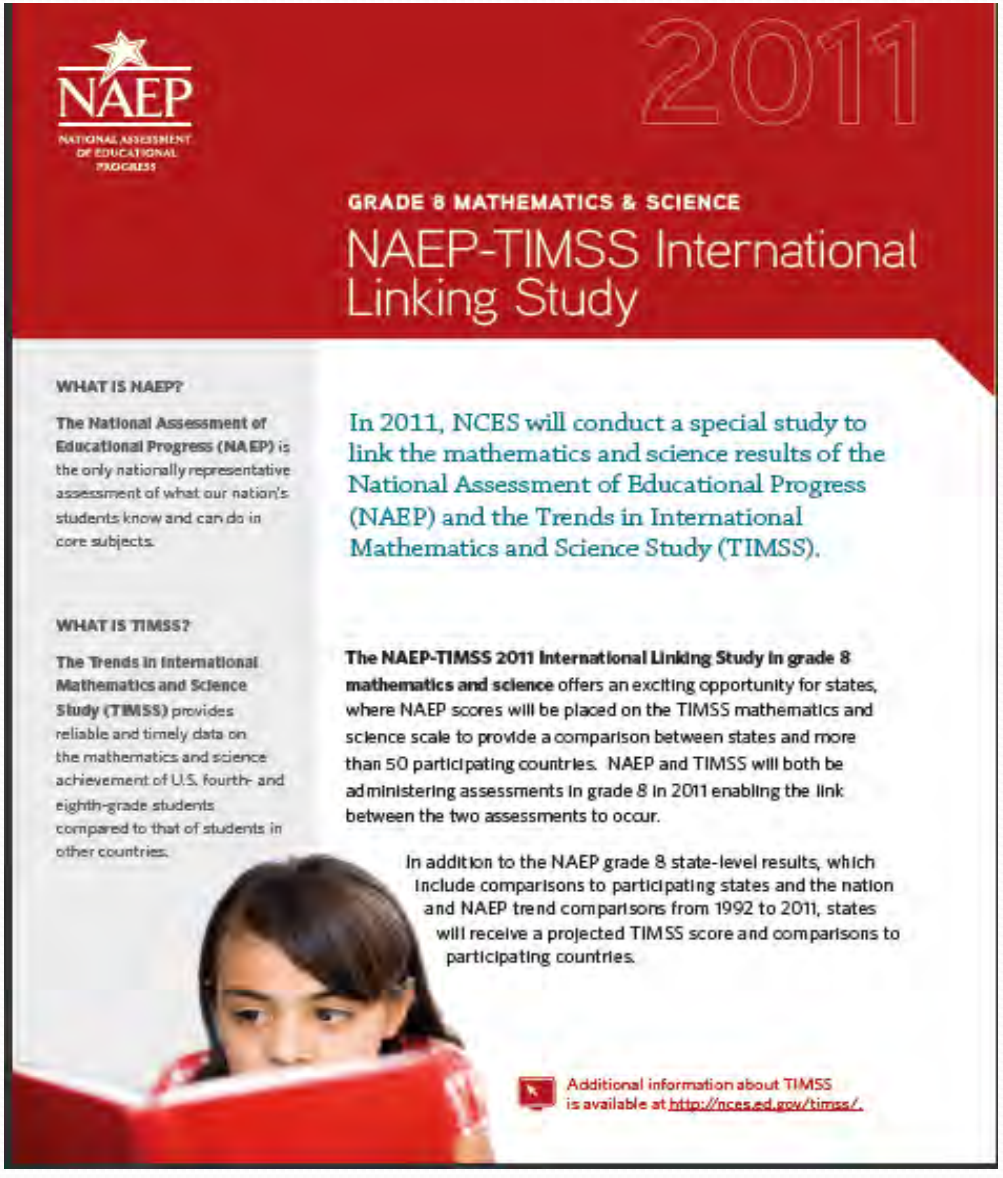
United States scored not significant from the International Average.
Of the 11 countries/jurisdictions that scored above the International Average, 7 also scored above the International Average on the previous Mathematics question

Additional examples of released science TIMSS items are available at http://nces.ed.gov/timss/educators.asp

NAEP-TIMSS Linking Study

- All states' grade 8 NAEP 2011 results in mathematics and science will be projected onto the TIMSS scoring scale.
- Actual TIMSS scores for Florida, because we paid to be over-sampled and receive state-level results, will be compared to projected TIMSS scores to ensure validity of the linking study.
- TIMSS results for Florida (and 8 other states) will be released at the same time as the TIMSS international and national results in late 2012.
- Results of the linking study-with projected TIMSS scores-will be released in early 2013.

NAEP-TIMSS Linking Study



NAEP
NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS

2011

GRADE 8 MATHEMATICS & SCIENCE

NAEP-TIMSS International Linking Study

WHAT IS NAEP?

The National Assessment of Educational Progress (NAEP) is the only nationally representative assessment of what our nation's students know and can do in core subjects.

WHAT IS TIMSS?

The Trends in International Mathematics and Science Study (TIMSS) provides reliable and timely data on the mathematics and science achievement of U.S. fourth- and eighth-grade students compared to that of students in other countries.

In 2011, NCES will conduct a special study to link the mathematics and science results of the National Assessment of Educational Progress (NAEP) and the Trends in International Mathematics and Science Study (TIMSS).

The NAEP-TIMSS 2011 International Linking Study in grade 8 mathematics and science offers an exciting opportunity for states, where NAEP scores will be placed on the TIMSS mathematics and science scale to provide a comparison between states and more than 50 participating countries. NAEP and TIMSS will both be administering assessments in grade 8 in 2011 enabling the link between the two assessments to occur.

In addition to the NAEP grade 8 state-level results, which include comparisons to participating states and the nation and NAEP trend comparisons from 1992 to 2011, states will receive a projected TIMSS score and comparisons to participating countries.

Additional information about TIMSS is available at http://nces.ed.gov/timss/.

Program for International Student Assessment (PISA)

- 15-year-old students are assessed in reading, mathematics, and scientific literacy every 3 years since 2000. http://nces.ed.gov/surveys/pisa/
- One subject assessed in depth at each administration (mathematics in 2012)
- Measures how well students can apply knowledge and skills to problems within real-life contexts as they approach the end of compulsory education rather than a direct measure of attained curriculum knowledge.

PISA Released Science Test Item

Give one reason why it is recommended that young children and old people, in particular, should be vaccinated against influenza (flu).

_____

_____

_____

Full credit: Responses referring to young and/or old people having weaker immune systems than other people, or similar. For example:

- **These people have less resistance to getting sick.**
- **The young and old can't fight off disease as easily as others.**
- **They are more likely to catch the flu.**
- **If they get the flu, the effects are worse in these people.**
- **Because organisms of young children and older people are weaker.**
- **Old people get sick more easily.**

A correct explanation involves applying several pieces of knowledge that are well established in the community.

PISA Science: Comparing Countries' Performance

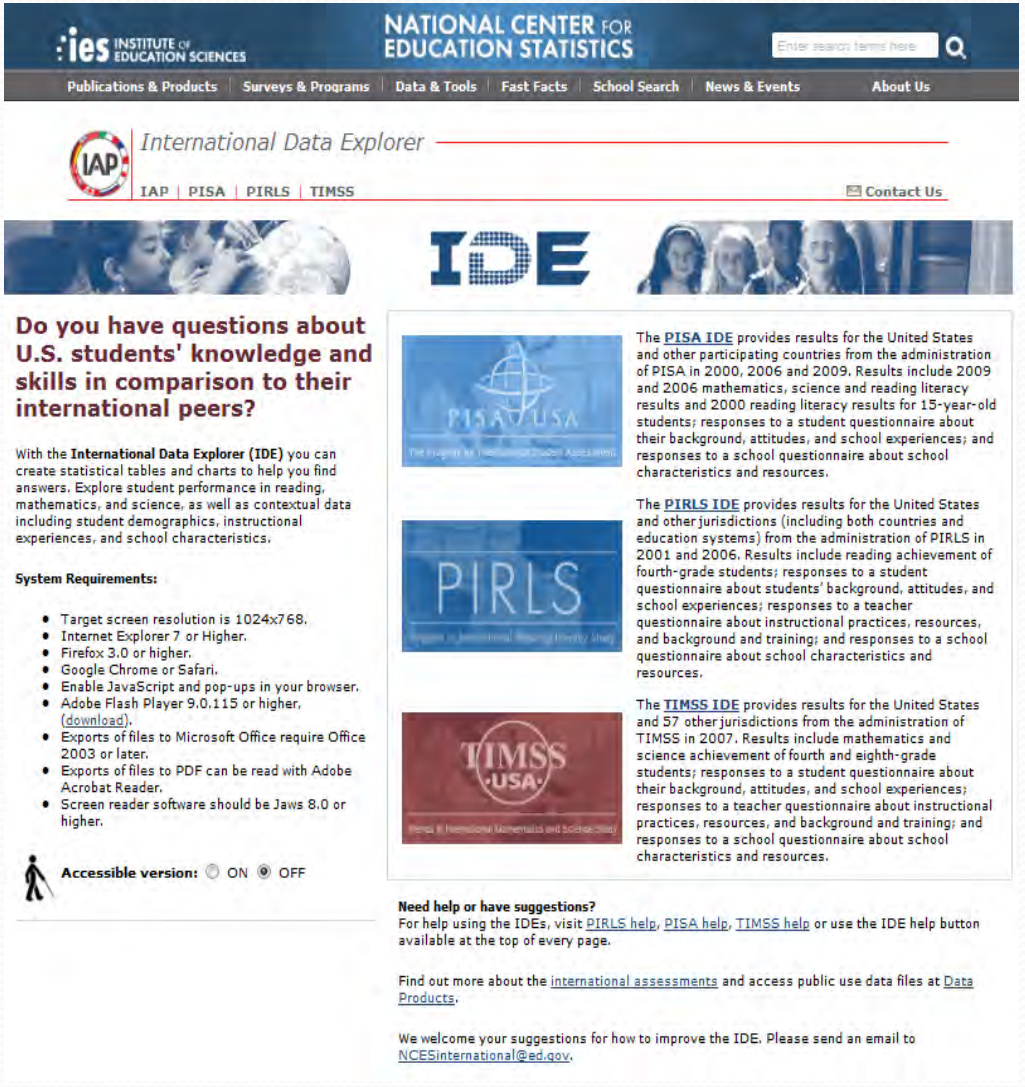
For the 75 educational systems that participated in the 2009 Science PISA assessment, the OECD (international) average was 501. The United States had an average score of 502 and was one of six educational systems whose score was not statistically different from the OECD average. There were 21 educational systems whose scores were significantly higher than the OECD average and 38 educational systems whose scores were significantly lower than the OECD average.

International results from the 2009 PISA can be found at: http://nces.ed.gov/surveys/international/reports/2011-mrs.asp#science.

International Data Explorer

http://nces.ed.gov/surveys/international/ide/

- Analyzes TIMSS, PIRLS, and PISA data
- Creates statistical tables and graphs
- Compares the performance of the United States with that of the other participating jurisdictions



Florida's NAEP Website

http://www.fldoe.org/asp/naep

NAEP

FLORIDA

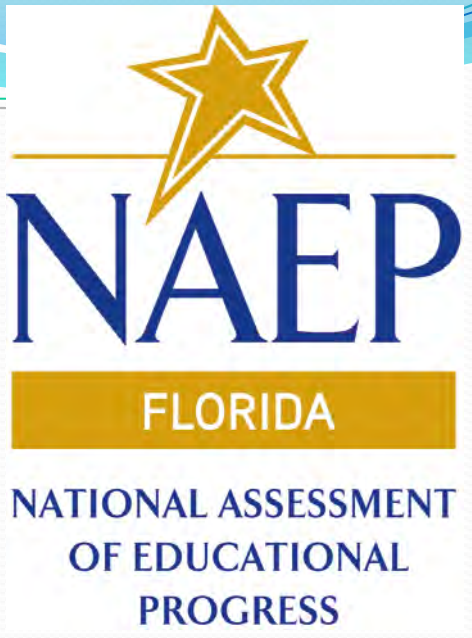
NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS

NAEP Links

- 2012-2013 NAEP Program
- 2012 Program for International Student Assessment
- NAEP Practice Tests
- Long-Term Trend Assessments
- NAEP Results
  - 2011 Mathematics State Results, Grades 4 and 8
  - 2011 Reading State Results, Grades 4 and 8
  - 2011 Science State Results, Grade 8
  - 2011 Hillsborough County TUDA Results, Grades 4 and 8
  - 2011 Miami-Dade County TUDA Results, Grades 4 and 8
  - 2009 Science Results, Grades 4 and 8
  - 2009 Grade 12 Results
  - 2007 Writing Results, Grade 8
- Overview and Resources
- Presentations, Newsletters, and Press Releases
- Previous Administrations
  - 2011-2012 NAEP Program
- Nation's Report Card
- NAEP Data Explorer
- NAEP Questions Tool
- Sample Questions Booklets for Grades 4, 8, and 12
- Background Questionnaires

Social Networking Websites

Florida NAEP State Coordinator



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