

NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS

NAEP

NAEP 101 Mathematics 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.



NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS

- 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 NAEP.

STATE	# ENROLLED	WHITE	AA	HISPANIC	Per-pupil	Pupil/teacher		
					expenditures	Ratio		
AR	482,114	65%	22%	10%	\$8,853	14		
СТ	560,546	62%	13%	19%	\$15,260	13		
FL	<mark>2,643,347</mark>	<mark>43%</mark>	<mark>23%</mark>	<mark>28%</mark>	<mark>\$8,747</mark>	<mark>15</mark>		
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

<u>Florida State Statute</u> 1008.22 (2)

"The Commissioner of Education shall direct Florida school districts to participate in the administration of NAEP, or similar <u>national</u> or <u>international</u> assessment program..."





The National Assessment of Educational Progress



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 Frameworks and Test Items

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

• 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
 - o U.S. History
 - o Geography
 - Economics
 - Technology and Engineering Literacy (TEL) Assessment
 - o Arts
- Special Studies
 - Long-term Trend NAEP (every fourth year in even-numbered years)
 - High School Transcript Study (HSTS) (every fourth year in oddnumbered 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.



Video Clips of Sample Scenarios



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



| Fast | Papel | Fast | Papel

Charling

Plant growth

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.



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.

LTT Sample Mathematics Questions

Age 9	38 74 Add: 66 <u>+75</u>	
	ANSWER:253	

Age 13 Write as a decimal:

 $\frac{136}{100} =$ _____



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 coursetaking 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.

U.S. Department of Education

Results of the 2009 Naep High School Transcript Study

HSTS

•Conducted during the summer of every 4th oddnumbered 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.



• 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 2003	50%*	62%
White 2011	45%*	54%
Hispanic 2003	19%*	15%
Hispanic 2011	27%*	23%
African-American 2003	27%*	17%
African-American 2011	22%*	16%
NSLP 2003	43%*	36%
NSLP 2011	55%*	48%
SD 2003	13%*	11%
SD 2011	13%	11%
ELL 2003	6%*	5%
ELL 2011	5%	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 <u>not</u> 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 Mathematics Results

Snapshot Reports

Nation's Mathematics Report Card 2011 State Snapshot Report

Destail Bastills

- In 2011, the average score of fourth-grade students in Floorda was 240. This was not significantly different from the average score of 240 for public school students in the nation
- The average score for students in Florida in 2011 (240) was not significantly different from their average ecore in 2009 (242) and was higher than their average score in 1992 (214).
- In 2011, the score gap between students in Florida at the 79th percentile and students at the 25th percentile was 36 points. This performance gap was narrower than that of 1992 (42 points)
- The percentage of students in Floride who performed at or above. the NAEP Proficient level was 37 percent in 2011. This percentage was not significantly different from that in 2009 (40 percent) and was greater than that in 1992 (13 percent).
- The percentage of students in Florida who performed at or above. the NAEP Besic level was 84 percent in 2011. This percentage was not significantly different from that in 2009 (86 percent) and was creater then that in 1992 (52 percent).

Compare the Average Score in 2011 to Other States/Juriadictions



¹ Department of Defense Education Activity Ioverseas and domestic achopial

- in 2011, the average score in Florida (240) was
- · lower than those in 21 states/jurisdictions
- higher than those in 13 states/juladictions
- · not significantly different from those in 17 states/unsdictions

Results for Student Groups in 2011

	Percent of	AVO		above	Percent at
Reporting proups	students		Basic	Profibient	Advanced
ReceilEtinkity			-	-	
White	40	250	- 92	52	
Dack	25	226	70	10	
Hapanic	- 29	236	1.00	31	3
Asian	3	258	- 20	00	17
American Indian/Alaska Native			:		:
Native Have lies Pacific Islander		1	+	+	:
Two or more races	3	242	- 60		Ó
Gender			-		
Male	51	240	- 10		6
Female	-62	240	- 34	50	5
National School Lunch Program	-	1	-		
Eighte	62	232	70	20	2
Not eligible	- 30	252	83	- 50	-11
# Rounds to zero.	‡Re	porting	standar	the not met.	

105

NOTE: Datai may not sum to totale because of rounding, and because the "information not available" category for the National School Lunch Program, which provides the induced-point unches, is not disciplyed. Takin triclation African Anerkon and Hapanic Includes Latins. Race categories exclude Histanic origin.

NOTE: Optimizationmentors are optimized on the basis of unconded static scores or percentages. SOURCE U.S. Department of Education, haltstare of Education Sciences, National Center for Education Transmiss. Analysis of Sources Analysis and Analysis and Analysis Analysis and Analysis Analysis and Analysis and Analysis Analysis and Analysis and Analysis Analysis and Analysis Analysis and Analysis and Analysis and Analysis and Analysis and Analysis Analysis and Analysis Analysis and Analysis and Analysis and Analysis and Analysis and Analysis and Analysis Analysis and Analysis



2011

Raine



Below Basic DBasic Profess Advanced

⁵ Significantly different (p < .05) from state's results in 2011. Significance tests were performed using undunded numbers. Accommodations not permitted. For information about NACP dations, see

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

Average Scores for State/Jurisdiction and Nation (public)



Significantly different (p < 05) from 2011. Significance texts were

NOTE: For information about NAEP accommodations, see

Score Game for Station Groups

- a In 2011, Black students had an average acces that was 25 points lower than White students. This performance gap was narrower than that in 1992 (34 points).
- In 2011, Hispanic students had an average score that was 14 points lower than White students. This performance gap was not significantly different from that in 1992 (18 points).
- In 2011, male students in Florida had an everage 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 20 points lower than students who were not eligible for free/reduced-place school kinch. This performance gap was not significantly different from that in 1006 (24 points)

Nation's Mathematics

Report Card 2011 State Snapshot Report

Overall Results

Fiorid

- In 2011, the average score of eighth-grade students in Florida was 278. This was lower than the average score of 283 for public school students in the nation.
- The average score for students in Florida in 2011 (278) was not significantly different from their average score in 2009 (279) and was higher than their average score in 1990 (255).
- 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 1990 (49 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 (29 percent) and was greater than that in 1990 (12 percent).
- The percentage of students in Florida who performed at or above the NAEP Basic level was 68 percent in 2011. This percentage was not significantly different from that in 2009 (70 percent) and was greater than that in 1990 (43 percent).

Compare the Average Score in 2011 to Other States/Jurisdictions



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

- In 2011, the average score in Florida (278) was
- Iower than those in 36 states/jurisdictions
- higher than those in 8 states/jurisdictions
- not significantly different from those in 7 states/jurisdictions

Results for Student Groups in 2011

	Percent of	Ava		antages at above	Percent at	
Reporting groups				Proficient	Advanced	
Race/Ethnicity		-				
White	45	287	79	.37	8	
Black	22	258	46	11	1	
Hispanic	27	274	65	22	3	
Asian	3	314	94	66	26	
American Indian/Alaska Native	=	1	1	1	1	
Native Hawalian/Pacific Islander	=	1		1	İ	
Two or more races	3	283	76	32	5	
Gender	-	-	1000			
Male	51	278	68	29	6	
Female	49	277	68	27	5	
National School Lunch Program		- 21	1			
Eligible	55	267	57	16	2	
Not eligible	45	291	81	42	10	

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 freereduced-price lunches, is not displayed. Black indudes African American and Hispanic includes Latino. Race categories exclude Hispanic origin.

Achievement-Level Percentages and Average Score Results Average Score 1990* 444 4 255 1992 13* 11 260* 19963 264* 51 2 2003 271* 59° 274* 2005 22 277 2009 279 2011 278 26 8 283

Florid

Grade

Public School



Significantly different (p < .05) from state's results in 2011. Significance tests were performed using unrounded numbers. Accommodations not permitted. For information about NAEP accommodations, see

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



NOTE: For Information about NAEP accommodations, see

Score Gaps for Student Groups

- In 2011, Black students had an average score that was 29 points lower than White students. This performance gap was not significantly different from that in 1990 (34 points).
- In 2011, Hispanic students had an average score that was 14 points lower than White students. This performance gap
- was not significantly different from that in 1990 (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 1996 (27 points).

e.	ies	NOTE: Statistical comparisons are calculated on the basis of unpounded scale scores of percentag SOURCE: U.S. Department of Education, institute of Education Solences, National Center for Edu Assessment of Educational Progress (NAEP), various years, 1990–2011 Mathematics Assessment

cation Statistics, National



2007

Florida Mathematics vation's Grade 4 2011 State Snapshot Report **Public Schools** Report Card

Achievement Level Percentages and Average Scale Scores



- Significantly different (p < .05) from state's results in 2011. Significance tests were performed using unrounded numbers.
- a Accommodations not permitted. For information about NAEP accommodations, see http://nces.ed.gov/nationsreportcard/about/inclusion.asp.



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



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

In 2011, the average score in Florida (240) was

- lower than those in 21 states/jurisdictions
- higher than those in 13 states/jurisdictions
- not significantly different from those in 17 states/jurisdictions

Ation's Mathematics Report Card 2011 State Snapshot Report Florida Grade 4 Public Schools





In 2005, 2007, and 2009, Florida had an average scale score significantly higher than the Nation (public).



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

NOTE: For information about NAEP accommodations, see http://nces.ed.gov/nationsreportcard/about/inclusion.asp.

Ation's Mathematics Report Card 2011 State Snapshot Report

Results for Student Groups in 2011

Florida Grade 4 Public Schools

	Florida
	Grade 4
Public	Schools

	Percent of	Avg.	Percentages at or above		Percent at
Reporting groups	students	score	Basic	Proficient	Advanced
Race/Ethnicity			1.0		
White	40	250	92	52	9
Black	25	226	70	18	1
Hispanic	29	236	81	31	3
Asian	3	258	96	66	17
American Indian/Alaska Native	#	+	‡	‡	‡
Native Hawaiian/Pacific Islander	#	‡	‡	+	+
Two or more races	3	242	88	38	
Gender			1		
Male	51	240	83	38	6
Female	49	240	84	36	5
National School Lunch Program		-	1		
Eligible	62	232	78	26	2
Not eligible	38	252	93	56	11

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.



Achievement Gaps Grade 8 Mathematics

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.

A B

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 Mathematics, Grade 8 Florida vs. National Public Race/Ethnicity Average Scale Scores



Scores can be compared in 5 ways:

- 1. Were the gains (or losses) in scores between 2003 and 2011 significant for Florida (FL) and for the National Public (NP) White (W) and Hispanic (H) students?
 - 1. FL W 286 to 287 not sig dif; NP W 287 to 293 stat sig increase
 - 2. FL H 264 to 274 stat sig increase; NP H 258 to 269 stat sig increase
- 2. Did FL's W and/or H students score significantly higher (or lower) than the NP's in 2011?
 - 1. FL W sig lower than NP W in 2011 (287 vs. 293)
 - 2. FL H sig higher than NP H in 2011 (274 vs. 269)

not sig dif= not significantly different
stat sig = statistically significant
Gaps in Average Scale Scores

NAEP 2011 Mathematics, Grade 8 Florida vs. National Public Race/Ethnicity Average Scale Scores



Scores can be compared in 5 ways (continued):

- 3. Was the change in FL's scores for W or H between 2003 and 2011 significantly greater (or smaller) than the change in the NP scores?
 - 1. FL W change of 1 pt between 2003 and 2011 sig lower than NP W change of 5 pts
 - 2. FL H change of 10 pts between 2003 and 2011 not sig dif from NP H change of 11 pts
- 4. Did the gap between FL's and the NP W and H students narrow (or widen) between 2003 and 2011?
 - 1. 9 pt narrowing of the gap between FL W and H students between 2003 and 2011 was stat sig (22 vs.13)
 - 2.5 pt narrowing of the gap between NP W and H students between 2003 and 2011 was stat sig (29 vs.24)
- 5. Was the difference in the change of the gap between 2003 and 2011 between FL's and the NP W and H students significant? No sig dif between 9 and 5 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



Do you have questions about what the nation's students know and can do?

With the **NAEP Data Explorer (NDE)** you can create statistical tables, charts, and maps to help you find answers. Explore the results of decades of assessment of students' academic performance, as well as information about factors that may be related to their learning.

For help using NDE, <u>view the tutorial</u>, visit the <u>Quick</u> <u>Reference Guide</u> (609K <u>PDF</u>) or use the <u>NDE help</u> button available at the top of every page.

System Requirements:

- Target screen resolution is 1024x768.
- Internet Explorer 7 or Higher.
- Firefox 3.0 or higher.
 Coogle Chrome or Sal
- Google Chrome or Safari.
 Enable JavaScript and pop-ups in your browser.
- Adobe Flash Player 9.0.115 or higher, (download).

Accessible version: 🔘 ON 🖲 OFF



MAIN NDE

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LTT NDE

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The Data Explorer for Main NAEP provides national

mathematics, reading, writing, and science. Results

and state results in 10 subject areas, including

have been produced for the nation and participating states and other jurisdictions since 1990, and for selected urban districts (on a trial basis) since 2002.

> The Data Explorer for Long-Term Trend provides national mathematics and reading results dating from the 1970s.





The Data Explorer for the <u>High School Transcript</u> <u>Study</u> provides data such as course-taking and grade point average for students who graduated high school in 1990, 2000, 2005, and 2009. For 2005 and 2009 graduates, these data are also linked to NAEP grade 12 mathematics and science results.

The Data Explorer for the <u>National Indian Education</u> <u>Study</u> provides NAEP grade 4 and 8 results from the mathematics and reading assessments for American Indian and Alaska Native students since 2005. Results are also available for a special survey that explored the educational experiences of the participating students, their teachers, and their schools. Read more about the NIES survey <u>here</u>.

NOTE: The <u>1997 Arts Assessment</u> data are only available in PDF format.

Quick Reference Guide to NAEP Data Explorer (NDE)



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?

- You can access the NDE by visiting <u>http://nces.ed.gov/nationsreportcard/naepdata</u> or by clicking <u>Analyze Data</u> on the NAEP home page at <u>http://nces.ed.gov/nationsreportcard</u>.
- 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.

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.



PP: You can

lso search for

artables using



NAEP Released Test Items -A Valuable Resource for Teachers

NAEP Grade 4 Mathematics

Every 30 minutes Dr. Kim recorded the number of bacteria in a test tube.

÷		
	Time	Number of Bacteria
	1:00 P.M.	600
	1:30 P. M .	1,190
	2:00 P. M .	2,390
	2:30 P.M.	4,800

Which best describes what happened to the number of bacteria every 30 minutes?

- a. The number of bacteria increased by 500
- b. The number of bacteria increased by 1,000
- c. The number of bacteria doubled
- d. The number of bacteria tripled

Description: Identify the growth relationship from a table Content Area: Algebra Difficulty: Hard Complexity: Moderate

NAEP Grade 4 Mathematics

C is the Correct Answer

Why might students choose A?

Answers	Percent chosen by Florida's participating students
*C	35%
Α	31%
в	18%
D	14%
Omitted	2%

NAEP Grade 8 Geometry

Figure 1 below is a regular hexagon with its center at point P. The dotted lines divide the hexagon completely into 6 congruent triangles sharing a vertex at point P.

Figure 2 below is a regular octagon with its center at point *Q*. The octagon can be completely divided into congruent triangles sharing a vertex at point *Q*.



The division should produce

- a. Sixteen congruent equilateral triangles
- b. Sixteen congruent isosceles triangles.
- c. Eight congruent right triangles.
- d. Eight congruent equilateral triangles.
- e. Eight congruent isosceles triangles.

Description: Analyze subdivision of regular polygons Difficulty: Hard Complexity: Moderate

NAEP Grade 8 Geometry E is the Correct Answer

Answers	Percent chosen by Florida's participating students
*E	32%
Α	10%
В	12%
С	14%
D	30%

Why might students choose D?

NAEP Grade 12 Algebra

What is the solution to the system of equations $\begin{cases} 3x - 2y = -7 \\ x + y = 11 \end{cases}$?

Answer: x = _____ y = _____

Solution:

Answer: x = 3 y = 8

Sample solution by elimination:

Sample solution by substitution:

3x - 2y = -73x - 2v = -7x + y = 11 $x + y = 11 \Rightarrow y = 11 - x$ 3x - 2y = -73x-2(11-x)=-72[x+y=11]3x - 22 + 2x = -75x - 22 = -73x - 2y = -75x = 152x + 2y = 22x = 3= 155x3 + y = 11x = 3y = 83 + y = 11y = 8

Description: Solve a system of linear equations Difficulty: Medium Complexity: Low

NAEP Grade 12 Algebra



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

NAEP /	NAEP Questions To	ol		
A	nalyze Data Sample Q	uestions State Com	parisons State Prof	iles District Profiles
	NAEP Questi	ons Tool		Tutorial >
	subject. On the next scr assemble and print que	lecide which assessment een, you will be able to ref estions, student response t more about NAEP sampl	fine your search results an s, scoring guides, and pe	rformance data from NAEP
	Main NAEP What's the Arts	nis? Civics	Economics	Geography
	Mathematics	Reading	Science	U.S. History
		Wr	iting	

Long-Term Trend NAEP What's this?

Long-Term Trend Mathematics Long-Term

Searching for Questions

Sea	irch Resi	ults (950 d	of 950) M	y Work	space (0)		
ŧ	Add All Qu	lestions	Remove	All Que	stions	Print/Save Lis	t 🔽 Show/Hide 🔽
	Year 🔻	Grade 🔺	Block 🔺	# 🔺	Туре 🔺	Difficulty 🔺	Description
+ .	2011	4	M8	2	MC	Easy	Identify a figure that is not symmetric (calculator available)
ŧ.	2011	4	M8	3	MC	Easy	Identify appropriate unit for measuring length (calculator available)
ŧ.	2011	4	M8	4	MC	Easy	Solve a story problem involving division (calculator available)
ŧ.	2011	4	M8	5	SCR	Easy	Multiply two decimal numbers (calculator available)
ŧ.	2011	4	M8	6	MC	Easy	Identify the most likely outcome from a given spinner (calculator available)
ŧ.	2011	4	M8	7	MC	Medium	Solve a story problem involving multiplication (calculator available)
ŧ.	2011	4	M8	8	MC	Easy	Determine the sum of numbers represented on a number line (calculator available)
ŧ.	2011	4	M8	9	MC	Medium	Compare numbers of cubes in two solids (calculator available)
ŧ.	2011	4	M8	10	MC	Medium	Determine scale used in drawing (calculator available)
ŧ.	2011	4	M8	11	SCR	Medium	Solve an arithmetic problem with large numbers (calculator available)
ŧ.	2011	4	M8	12	MC	Medium	Determine distance between centers of adjacent squares (calculator available)
ŧ.	2011	4	M8	13	SCR	Medium	Create a pictograph of a set of data (calculator available)
ŧ.	2011	4	M8	14	MC	Hard	Identify the growth relationship from a table (calculator available)
ŧ.	2011	4	M8	15	SCR	Medium	Solve a story problem involving time (calculator available)
ŧ.	2011	4	M8	16	MC	Medium	Identify best unit for measuring a liquid quantity (calculator available)
ŧ.	2011	4	M8	17	SCR	Medium	Write calculator directions for how to solve problem (calculator available)
ŧ.	2011	4	M8	18	MC	Hard	Solve a story problem involving quarts and gallons (calculator available)
ŧ.	2011	4	M8	19	ECR	Hard	Solve arithmetic problem using multiple operations (calculator available)
(

View Question Detail

Refining Search

Select Grade, Type, Difficulty

Grade 🔒

- Grade 4 (344)
- Grade 8 (393)
- Grade 12 (213)

Туре 🔒

- Multiple Choice (630)
- Short Constructed Response (277)
- Extended Constructed Response (43)

Difficulty 🔒

- 🗹 Easy (358)
- Medium (288)
- Hard (304)

Select Content Classifications
0
Content Area 🖓
 Number properties and operations (298)
Measurement (165)
Geometry (185)
Data analysis and probability (131)
Algebra (191)
0 I 1 (0005 I) 0
Complexity (2005 and on) 🙃
Low (276)
Moderate (154)

_ 2 . .

High (8)

Ability (1990-2003) 🔒

- Conceptual understanding (181)
- Procedural knowledge (134)
- Problem solving (197)

	Select Years
Framework 2 ၀	
2011 (98)	
2009 (92)	
2007 (107)	
2005 (141)	
Framework 1	
2003 (128)	
1996 (83)	
1992 (191)	
1990 (112)	

Рег	form	Keyw	ord S	earch
		Go		

Search question descriptions for subject-specific keywords, e.g., calculator.

Questions

Question Information

- Description: Identify a figure that is not symmetric (calculator available)
- Grade: 4
- Year: 2011
- Block & Number: Block M8 Question #2
- Type of Question: Multiple Choice
- Difficulty: Easy (95.89% Correct)
- Content Classification:
 - Content Area: Geometry
 - Complexity (2005 and on): Low

Question Key/Scoring Guide National Data Jurisdiction Data

2. Which decoration CANNOT be folded along the dotted line so that both parts match?









Did you use the calculator on this question?

O No

O Yes

Quick Reference Guide to NAEP Questions Tool (NQT)

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/itmriss.
- Or, from the NAEP home page (<u>http://nces.ed.gov/nationsreportcard</u>) 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:

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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

- <u>Reading</u> (Word, 1MB)
- <u>Mathematics</u> (Word, 606KB)
- Science (Word, 677KB)

Grade 8

- <u>Reading</u> (Word, 984KB)
- Algebra (Word, 248KB)
- Data Analysis and Probability (Word, 330KB)
- <u>Geometry</u> (Word, 376KB)
- <u>Measurement</u> (Word, 444KB)
- <u>Number Properties and Operations</u> (Word, 250KB)
- Earth Space Sciences (Word, 416KB)
- Life Science (Word, 718KB)
- <u>Physical Science</u> (Word, 302KB)

Grade 12

- <u>Reading</u> (Word, 531KB)
- Algebra (Word, 487KB)
- Data Analysis and Probability (Word, 400KB)
- <u>Geometry</u> (Word, 418KB)
- <u>Measurement</u> (Word, 334KB)
- <u>Number Properties and Operations</u> (Word, 413KB)
- Earth Space Sciences (Word, 555KB)
- Life Science (Word, 723KB)
- <u>Physical Science</u> (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
	Progress in International	Trends in International	Program for International
Name	Reading Literacy Study	Mathematics and Science	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		Grade 4: 60 total	
participate in the assessment?	58 education systems	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		Grade 4: 17,051	
in the most recent study?	15,361	Grade 8: 30,254	11,725
			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
What is assessed?	Reading literacy	Mathematics, science	domains
		For a few participating states	
		in 1999, 2007, and 2011. For	
		TIMSS 2011*, 9 states will	Yes, Connecticut, Florida, and
	Yes, Florida will receive state-	receive state-level data (AL,	Massachusetts will receive
Are state-level data available?	level data for PIRLS 2011.	CA, CT, CO, FL, IN, MA, MN, and	state-level data for PISA 2012
		For a few participating districts	
		in 1995, 1999, and 2011.	
		Hillsborough and Miami-Dade	
		will receive projected TIMSS	
Are district-level data available?	No	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 Mathematics Test Item Grade 8

If x = -3, what is the value of -3x?



United States was 1 of 19 countries/ jurisdictions to score higher than the international average. Hong Kong, SAR 84 Korea, Republic of 84 Chinese Taipei 83 . . Singapore 80 . 77 Estonia 74 . Japan . **Russian Federation** 73 . 69 Hungary . Israel 67 65 . Serbia and Montenegro United States 65 Belaium (Flemish) 63 62 . Armenia

International average 48

Latvia

Lithuania

Bulgaria

Romania

Slovenia

Lebanon

Netherlands

Slovak Republic

Moldova, Republic of

Additional examples of released mathematics TIMSS items are available at <u>http://nces.ed.gov/timss/educators.asp</u> .

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61

60

58 57

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51

51

49

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





GRADE & 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. 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).

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. 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. <u>http://nces.ed.gov/surveys/pisa/</u>

• 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.

ISA

PISA Released Mathematics Test Item

Question 1. SPEED OF A RACING CAR



What is the approximate distance from the starting line to the beginning of the longest straight section of the track?



1.		
iceland	84	1
Japan	83	
France	82	
Finland	82	
Liechtenstein	77	- 0
Korea, Republic of	77	- 3
Australia	76	
United Kingdom	75	
New Zealand	74	6
Canada	73	
Czech Republic	73	1
Russian Federation	73	- 6
Norway	72	6
Belgium	72	10
Sweden	71	10
Denmark	70	5
Latvia	70	-
Austria	70	-0
OECD average	89	
Switzerland	68	C.
Spain	68	1
Ireland	67	- 6
Germany	66	1
Luxembourg	66	5
Portugal	63	0
United States	63	10

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



Do you have questions about U.S. students' knowledge and skills in comparison to their international peers?

With the International Data Explorer (IDE) you can create statistical tables and charts to help you find answers. Explore student performance in reading, mathematics, and science, as well as contextual data including student demographics, instructional experiences, and school characteristics,

System Requirements:

- Target screen resolution is 1024x768.
- Internet Explorer 7 or Higher.
 Firefox 3.0 or higher.
- Firefox 3.0 or higher.
 Google Chrome or Safari.
- Google Chrome or Satari.
 Enable JavaScript and pop-ups in your browser.
- Adobe Flash Player 9.0.115 or higher, (download).
- Exports of files to Microsoft Office require Office 2003 or later.
- Exports of files to PDF can be read with Adobe Acrobat Reader.
- Screen reader software should be Jaws 8.0 or higher.

Accessible version: O ON @ OFF



The <u>**DISA IDE</u>** provides results for the United States and other participating countries from the administration of PISA in 2000, 2006 and 2009, Results include 2009 and 2006 mathematics, science and reading literacy results and 2000 reading literacy results for 15-year-old students; responses to a student questionnaire about their background, attitudes, and school experiences; and responses to a school questionnaire about school characteristics and resources.</u>

The <u>PIRLS IDE</u> provides results for the United States and other jurisdictions (including both countries and education systems) from the administration of PIRLS in 2001 and 2006. Results include reading achievement of fourth-grade students; responses to a student questionnaire about students' background, attitudes, and school experiences; responses to a teacher questionnaire about instructional practices, resources, and background and training; and responses to a school questionnaire about school characteristics and resources.

The TIMSS IDE provides results for the United States and 57 other jurisdictions from the administration of TIMSS in 2007. Results include mathematics and science achievement of fourth and eighth-grade students; responses to a student questionnaire about their background, attitudes, and school experiences; responses to a teacher questionnaire about instructional practices, resources, and background and training; and responses to a school questionnaire about school characteristics and resources.

Need help or have suggestions?

For help using the IDEs, visit <u>PIRLS help</u>, <u>PISA help</u>, <u>TIMSS help</u> or use the IDE help button available at the top of every page.

Find out more about the international assessments and access public use data files at Data Products.

We welcome your suggestions for how to improve the IDE. Please send an email to <u>NCESinternational@ed.gov</u>.

Florida's NAEP Website http://www.fldoe.org/asp/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
 - o 2011 Mathematics State Results, Grades 4 and 8
 - 2011 Reading State Results, Grades 4 and 8
 - 2011 Science State Results, Grade 8
 - o 2011 Hillsborough County TUDA Results, Grades 4 and 8
 - o 2011 Miami-Dade County TUDA Results, Grades 4 and 8
 - o 2009 Science Results, Grades 4 and 8
 - o 2009 Grade 12 Results
 - o 2007 Writing Results, Grade 8
- Overview and Resources
- Presentations, Newsletters, and Press Releases
- Previous Administrations
 - <u>2011-2012 NAEP Program</u>
- Nation's Report Card
- NAEP Data Explorer
- NAEP Questions Tool
- Sample Questions Booklets for Grades 4, 8, and 12
- Background Questionnaires

Social Networking Websites



Find Us on Facebook and Twitter!

NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS



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Follow NAEP (@NAEP_NCES) on Twitter here: www.twitter.com/NAEP_NCES

Florida NAEP State Coordinator NAFP



NATIONAL ASSESSMENT **OF EDUCATIONAL** PROGRESS

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