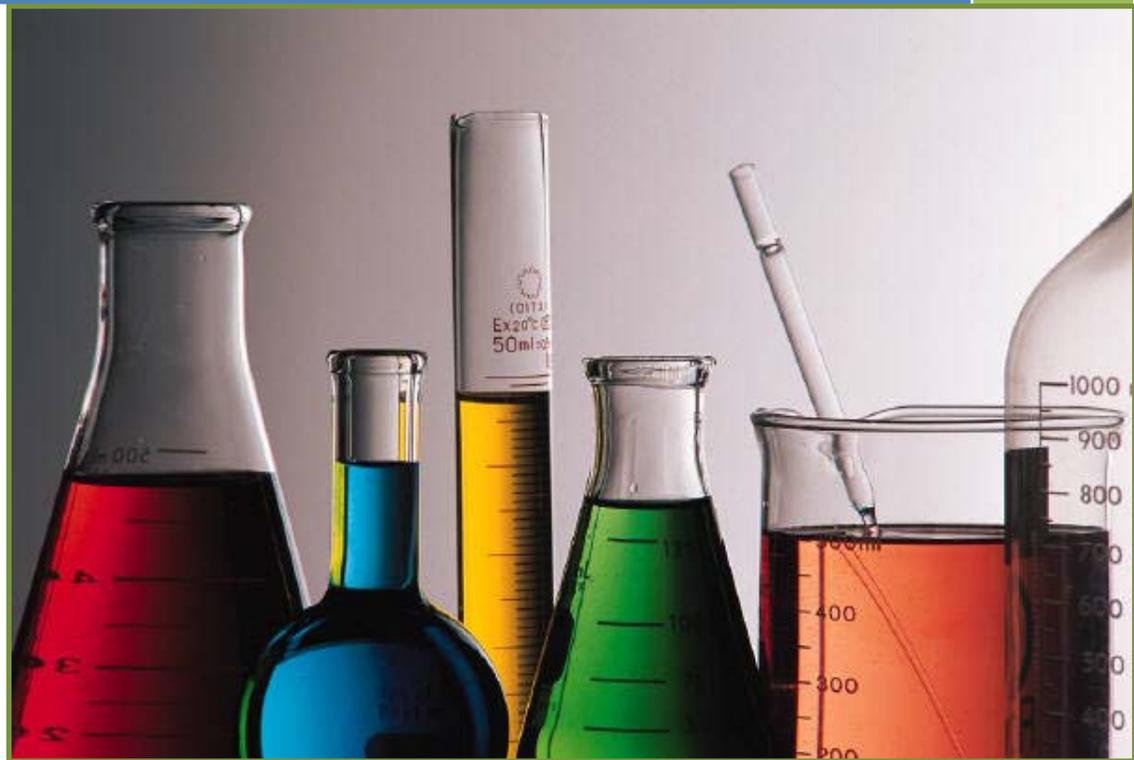




2009

Rhode Island NAEP Science Results



RHODE ISLAND

NATIONAL ASSESSMENT
OF EDUCATIONAL
PROGRESS

NAEP Science Results

Executive Summary

The National Assessment of Educational Progress (NAEP) is the only science test administered across the country. This gives educators and policymakers additional data by which to examine their state science test results. In many schools across our state, Reading and Mathematics are given each odd-numbered year in grades 4 and 8 in order to fulfill the requirements of No Child Left Behind. It was during one of these administrations that some of our state's students were also assessed in Science.

While NAEP was administered in 2000 and 2005, the 2009 results mark the beginning of a new trend so performance from previous years is not included in this report.

NAEP Science is a voluntary subject and not part of the ESEA Reauthorization Act of 2001 so four states declined participation: VT, AK, KS, and NE. The District of Columbia did not have a sufficient number of students to participate.

The NAEP Science assesses content and skills in Physical, Life, and Earth & Space, as well as Inquiry.

How is the 2009 NAEP science framework different from the previous framework?

The *Science Framework for the 2009 National Assessment of Educational Progress* replaces the framework that was used for earlier NAEP science assessments in 1996, 2000, and 2005. In contrast to the earlier framework, the 2009 science framework employs crosscutting questions, that is, questions classified as one content area that also require knowledge of one or both of the other content areas. In addition, the framework gives greater emphasis to Earth and space sciences in the eighth-grade assessment and both physical science and life science in the twelfth-grade assessment. It defines four science practices that take into account cognitive conceptual complexity and describe how students use their science knowledge. It also recommends the use of new question types and the inclusion of questions on technological design.

Why was the NAEP science framework changed?

The new framework was developed to keep the assessment content current with key developments in science curriculum standards (including the *National Science Education Standards* and *Benchmarks for Science Literacy*), new innovative assessment approaches, and research, including advances in science research into the relationship of human activity and the natural world and the expanding knowledge of space. In addition, the new framework was informed by advances in cognitive research, including how students learn increasingly complex material over time. Technological design questions in the 2009 assessment allowed students to apply their science knowledge and skills to solve problems in a real-world context.

Major Findings: NAEP 2009 Science

Grade 4:

- RI's scale score (150) was not different from the national average (149).
- The gaps between White and Hispanic students are large across all achievement levels as are the gaps between students with disabilities, and students eligible for free or reduced lunch and their counterparts.
- There are 86% of 4th grade white students achieving at Basic or above, while only 46% of Black and 44% of Hispanic students are reaching the same achievement level.
- **NECAP and NAEP:** The gaps between certain subgroups on NAEP mirror the gaps found on the 2009 administration of NECAP science.

GRADE 4: The gaps between certain subgroups on NAEP and NECAP: Percent of students at or above Proficient on both assessments.		
	NAEP	NECAP
White – Black	34%	36%
White – Hispanic	35%	37%
Non Lunch – Lunch	34%	35%

Grade 8:

- RI's scale score was lower than the national average.
- Hispanic students at grade 8 had the lowest scale score in the nation (119). The national average is 131.
- Seventy-four percent of Rhode Island's Hispanic and 59% of Hispanic students nationally scored in the Below Basic range.
- Black students in Rhode Island scored at the national average (125). Thirty-two percent of black student achieved Proficient on the NAEP test, the same as the nation.
- Gaps at the 8th grade level are large however; the gap between White and Black students is smaller than the nation across all achievement levels.
- **NECAP and NAEP:** The gaps between certain subgroups on NAEP mirror the gaps found on the 2009 administration of NECAP science.

GRADE 8: The gaps between certain subgroups on NAEP and NECAP: Percent of students at or above Proficient on both assessments.		
	NAEP	NECAP
White – Black	25%	25%
White – Hispanic	28%	25%
Non Lunch – Lunch	27%	27%

Questions: How many states have lower and higher and scores than Rhode Island? Which states have scores not statistically different from ours? Four states (VT, NE, KS, and AK) did not participate in 2009 Science.

		<i>Not Different than RI</i>	<i>Lower Score than RI</i>	<i>Higher Score than RI</i>
Grade 8	Number of States	12	7	27 (and Nation)
	State Abbreviations	NY, MD, WV, IL, NC, SC, GA, TN, FL, AR, OK, NM	LA, MS, AL, AZ, NV, CA, HI	ME, NH, MA, CT, NJ, DE, PA, VA, KY, OH, IN, MI, WI, MN, IA, MO, TX, CO, WY, UT, MT, ID, WA OR, DOD, Nation
Grade 4	Number of States	15 (and Nation)	10	21
	State Abbreviations	NY, PA, MD, WV, NC, SC, TN, FL, MI, IN, IL, OK, TX, WA, OR	GA, AL, MS, LA, AR, NM, AZ, NV, CA, HI	ME, NH, MA, CT, NJ, DE, VA, KY, OH, MO, IA, WI, MN, ND, SD, MT, WY, CO, UT, ID, DOD

Question: How large are the gaps between subgroups for Rhode Island and the Nation across subgroups?

Grade 4 Science: Gaps between subgroups for Rhode Island and National Public

	Average Scale Score		Percent at/above Basic		Percent at/above Proficient	
	Rhode Island	NP	Rhode Island	NP	Rhode Island	NP
Male - Female	2	1	1	0	4	3
White – Black	35	35	40	40	34	36
White – Hispanic	37	32	42	34	35	33
White - Asian	9	2	15	6	7	1
Non SD – SD	29	22	33	24	25	19
Non ELL – ELL	48	39	55	42	33	30
Non Lunch - Lunch	31	29	35	30	34	32

Scale Scores: Grade 4: 130 or lower is below *Basic*; 131-166 is *Basic*; 167-223 is *Proficient*; 224 -300 is *Advanced*. **Grade 8:** 140 or lower is below *Basic*; 141-169 is *Basic*; 170-214 is *Proficient*; 215-300 is *Advanced*.

Grade 8 Science: Gaps between subgroups for Rhode Island and National Public

	Average Scale Score		Percent at/above Basic		Percent at/above Proficient	
	Rhode Island	NP	Rhode Island	NP	Rhode Island	NP
Male - Female	6	4	7	4	8	6
White – Black	30	36	38	45	25	33
White – Hispanic	36	30	44	36	28	29
White - Asian	9	2	11	5	12	1
Non SD – SD	35	30	38	33	23	20
Non ELL – ELL	-	-	-	-	-	-
Non Lunch - Lunch	30	28	37	33	27	27

Question: Which states have the highest and lowest scores and where is RI in comparison to them? The NAEP Science scale ranges from 0 – 300.

Grade 4	Subgroup	Rhode Island	Low Score	High Score
	All Students	150.31	133.0 (MS)	163.31 (NH)
	White	160.74	149.61 (WV)	171.52 (VA)
	Black	126.39	115.84 (MS)	140.92 (VA)
	Hispanic	123.66	121.19 (CA)	152.44 (VA)
	Asian	152.38	137.57 (HI)	174.14 (VA)
	SD	124.10	90.07 (HI)	147.48 (ND)
	ELL	104.56	97.61 (AZ)	143.40 (VA)
	Free/Reduced Lunch	131.76	121.77 (CA)	150.76 (ME)

Grade 8	Subgroup	Rhode Island	Low Score	High Score
	All Students	145.94	132.07 (MS)	162.44 (ND)
	White	155.01	146.25 (WV)	166.65 (TX)
	Black	124.9	111 (AR)	143 (DOD)
	Hispanic		119 (RI)	154.14 (MT)
	Asian	145.67	135.54 (HI)	174.12 (NJ)
	SD	115.38	92.86 (CA)	137.11 (ND)
	ELL	No data	85.9 (AZ)	136.37 (OH)
	Free/Reduced Lunch	127	122 (MS)	151 (MT)

Scale Scores: Grade 4: 130 or lower is below *Basic*; 131-166 is *Basic*; 167-223 is *Proficient*; 224 -300 is *Advanced*. **Grade 8:** 140 or lower is below *Basic*; 141-169 is *Basic*; 170-214 is *Proficient*; 215-300 is *Advanced*.

Table Ia: All Students (4th Grade)

Average scale scores and percentages at or above each achievement level for science, grade 4, Rhode Island and Nation.

Year	Jurisdiction	All Students: Grade 4				
		Average scale score	Below basic	At or above basic	At or above proficient	At advanced
2009	Nation	149	29	71	32	1
	Rhode Island	150	26	74	34	#

Table Ib: All Students (8th Grade)

Average scale scores and percentages at or above each achievement level for science, grade 4, Rhode Island and Nation.

Year	Jurisdiction	All Students: Grade 8				
		Average scale score	Below basic	At or above basic	At or above proficient	At advanced
2009	Nation	149	38	62	29	1
	Rhode Island	146	41	59	26	1

Scale Scores: Grade 4: 130 or lower is below *Basic*; 131-166 is *Basic*; 167-223 is *Proficient*; 224 -300 is *Advanced*. **Grade 8:** 140 or lower is below *Basic*; 141-169 is *Basic*; 170-214 is *Proficient*; 215-300 is *Advanced*.

Table 2a: Percentiles (4th Grade)

Percentile scores for science, grade 4, by jurisdiction and all students

Year	Jurisdiction	All students: 4 th Grade Percentiles				
		10th percentile	25th percentile	50th percentile	75th percentile	90th percentile
2009	Nation	102	126	152	174	192
	Rhode Island	105	129	154	175	191

Table 2b: Percentiles (8th Grade)

Percentile scores for science, grade 8, by jurisdiction and all students,

Year	Jurisdiction	All students: 8 th Grade Percentiles				
		10th percentile	25th percentile	50th percentile	75th percentile	90th percentile
2009	Nation	102	127	152	174	191
	Rhode Island	100	125	148	171	188

Table 3a: Grade 4 Overview of all Subgroups

Student Group	Overview of Subgroups by Scale Score and Achievement Level				
	Average scale score 0-300	Percent of students at or above each Achievement Level			
		Below Basic	At or above Basic*	At or above Proficient	At Advanced
All Students		26	74	34	#
White	161	14	86	44	#
Black	126	54	46	10	#
Hispanic	124	56	44	9	#
Asian	152	29	71	37	1
Male	151	26	74	36	#
Female	149	27	73	32	#
Eligible for Free/Reduced Lunch	132	47	53	14	#
Not Eligible	163	12	88	48	#
English Language Learners	127	64	36	9	#
Non-ELL	157	27	73	36	2
Students with Disabilities	126	54	46	13	#
Not SD	155	21	79	38	#

Scale Scores: Grade 4: 130 or lower is below *Basic*; 131-166 is *Basic*; 167-223 is *Proficient*; 224 -300 is *Advanced*. **Grade 8:** 140 or lower is below *Basic*; 141-169 is *Basic*; 170-214 is *Proficient*; 215-300 is *Advanced*.

Table 3b: Grade 8 Overview of all Subgroups

Student Group	Overview of Subgroups by Scale Score and Achievement Level				
	Average scale score 0-300	Percent of students at or above each Achievement Level			
		Below Basic	At or above Basic*	At or above Proficient	At Advanced
All Students					
White	155	30	70	33	2
Black	125	68	32	8	#
Hispanic	119	74	26	5	#
Asian	146	41	59	21	2
Male	149	38	62	30	1
Female	143	45	55	22	1
Eligible for Free/Reduced Lunch	127	64	36	9	#
Not Eligible	157	27	73	36	2
English Language Learners	-	-	-	-	-
Non-ELL	147	40	60	26	1
Students with Disabilities	117	73	27	7	#
Not SD	152	35	65	30	1

Scale Scores: Grade 4: 130 or lower is below *Basic*; 131-166 is *Basic*; 167-223 is *Proficient*; 224 -300 is *Advanced*. **Grade 8:** 140 or lower is below *Basic*; 141-169 is *Basic*; 170-214 is *Proficient*; 215-300 is *Advanced*.

Table 4a: Students with Disabilities (4th Grade)

Average scale scores and percentages at or above each achievement level for science, grade 4, by disability status of student.

Year	Jurisdiction	SD					Not SD				
		Average scale score	Below basic	At or above basic	At or above proficient	At advanced	Average scale score	Below basic	At or above basic	At or above proficient	At advanced
2009	Nation	129	50	50	16	#	151	26	74	35	1
	Rhode Island	126	54	46	13	#	155	21	79	38	#

Table 4b: Students with Disabilities (8th Grade)

Average scale scores and percentages at or above each achievement level for science, grade 8, by disability status of student.

Year	Jurisdiction	SD					Not SD				
		Average scale score	Below basic	At or above basic	At or above proficient	At advanced	Average scale score	Below basic	At or above basic	At or above proficient	At advanced
2009	Nation	122	67	33	11	#	152	34	66	31	2
	Rhode Island	117	73	27	7	#	152	35	65	30	1

Table 5a: Gender (4th Grade)

Average scale scores and percentages at or above each achievement level for science, grade 4, by gender.

Year	Jurisdiction	Male					Female				
		Average scale score	Below basic	At or above basic	At or above proficient	At advanced	Average scale score	Below basic	At or above basic	At or above proficient	At advanced
2009	Nation	149	29	71	34	1	148	29	71	31	#
	Rhode Island	151	26	74	36	#	149	27	73	32	#

Table 5b: Gender (8th Grade)

Average scale scores and percentages at or above each achievement level for science, grade 8, by gender.

Year	Jurisdiction	Male					Female				
		Average scale score	Below basic	At or above basic	At or above proficient	At advanced	Average scale score	Below basic	At or above basic	At or above proficient	At advanced
2009	Nation	151	36	64	32	2	147	40	60	26	1
	Rhode Island	149	38	62	30	1	143	45	55	22	1

Scale Scores: Grade 4: 130 or lower is below *Basic*; 131-166 is *Basic*; 167-223 is *Proficient*; 224 -300 is *Advanced*. **Grade 8:** 140 or lower is below *Basic*; 141-169 is *Basic*; 170-214 is *Proficient*; 215-300 is *Advanced*.

Table 6a: Students Eligible for Free or Reduced Lunch (4th Grade)

Average scale scores and percentages at or above each achievement level for science, grade 4, by eligibility for Free/Reduced Lunch.

Year	Jurisdiction	Eligible					Not eligible				
		Average scale score	Below Basic	At or above Basic	At or above Proficient	At Advanced	Average scale score	Below Basic	At or above Basic	At or above Proficient	At Advanced
2009	National Public	134	44	56	16	#	163	14	86	48	1
	Rhode Island	132	47	53	14	#	163	12	88	48	#

Table 6b: Students Eligible for Free or Reduced Lunch (8th Grade)

Average scale scores and percentages at or above each achievement level for science, grade 8, by eligibility for Free/Reduced Lunch.

Year	Jurisdiction	Eligible					Not eligible				
		Average scale score	Below Basic	At or above Basic	At or above Proficient	At Advanced	Average scale score	Below Basic	At or above Basic	At or above Proficient	At Advanced
2009	Nation	133	57	43	14	#	161	24	76	41	2
	Rhode Island	127	64	36	9	#	157	27	73	36	2

Scale Scores: Grade 4: 130 or lower is below *Basic*; 131-166 is *Basic*; 167-223 is *Proficient*; 224 -300 is *Advanced*. **Grade 8:** 140 or lower is below *Basic*; 141-169 is *Basic*; 170-214 is *Proficient*; 215-300 is *Advanced*.

Table 7a: Race/Ethnicity (4th Grade)

Average scale scores and percentages at or above each achievement level for science, grade 4, by Race/ethnicity.

	White					Black					Hispanic					Asian/Pacific Islander				
	At or Above					At or Above					At or Above					At or Above				
	Ave. Scale Score	Below Basic	Basic	Prof.	Adv.	Ave. Scale Score	Below Basic	Basic	Prof.	Adv.	Ave. Scale Score	Below Basic	Basic	Prof.	Adv.	Ave. Scale Score	Below Basic	Basic	Prof.	Adv.
Nation	162	14	86	46	1	127	54	46	10	#	130	48	52	13	#	160	20	80	42	2
Rhode Island	161	14	86	44	#	126	54	46	10	#	124	56	44	9	#	152	29	71	37	1

Table 7b: Race/Ethnicity (8th Grade)

Average scale scores and percentages at or above each achievement level for science, grade 8, by Race/ethnicity.

	White					Black					Hispanic					Asian/Pacific Islander				
	At or Above					At or Above					At or Above					At or Above				
	Ave. Scale Score	Below Basic	Basic	Prof.	Adv.	Ave. Scale Score	Below Basic	Basic	Prof.	Adv.	Ave. Scale Score	Below Basic	Basic	Prof.	Adv.	Ave. Scale Score	Below Basic	Basic	Prof.	Adv.
Nation	161	23	77	41	2	125	68	32	8	#	131	59	41	12	#	159	28	72	40	3
Rhode Island	155	30	70	33	2	125	68	32	8	#	119	74	26	5	#	146	41	59	21	2

Scale Scores: Grade 4: 130 or lower is below *Basic*; 131-166 is *Basic*; 167-223 is *Proficient*; 224 -300 is *Advanced*. **Grade 8:** 140 or lower is below *Basic*; 141-169 is *Basic*; 170-214 is *Proficient*; 215-300 is *Advanced*.

Table 8a: English Language Learner (4th Grade)

Average scale scores and percentages at or above each achievement level for science, grade 4, by status as English Language Learner.

Year	Jurisdiction	ELL					Not ELL				
		Average scale score	Below Basic	At or above Basic	At or above Proficient	At Advanced	Average scale score	Below Basic	At or above Basic	At or above Proficient	At Advanced
2009	Nation	114	67	33	5	#	153	25	75	35	1
	Rhode Island	105	78	22	3	#	153	23	77	36	#

Table 8b: English Language Learner (8th Grade)

Average scale scores and percentages at or above each achievement level for science, grade 8, by status as English Language Learner.

Year	Jurisdiction	ELL					Not ELL				
		Average scale score	Below Basic	At or above Basic	At or above Proficient	At Advanced	Average scale score	Below Basic	At or above Basic	At or above Proficient	At Advanced
2009	Nation	103	86	14	2	#	151	35	65	31	1
	Rhode Island	-	-	-	-	-	147	40	60	26	1

- Not enough students in this subgroup to produce results.