Math Skills

DEFINITION

Math skills is the percentage of fourth- and eighth-grade students who scored at or above the proficiency level for math on the *New England Common Assessment Program* (NECAP) test in October 2007. The NECAP test measures reading, writing and math skills. Overall scores from the mathematics test are reported here.

SIGNIFICANCE

The ability to understand and use mathematics is critical in life. Students must rely on math skills not only for advancing their education, but also in the course of daily activities.[1] Schools in Rhode Island teach mathematics every year through eighth grade and require students to take four years of mathematics to graduate from high school.[2]

State, national and international assessments show that U.S. students fare well when asked to perform straightforward computational procedures, but tend to have a limited understanding of the basic mathematical concepts needed to solve simple problems. Performance in mathematics, while generally low, has been improving over the past decade.[3]

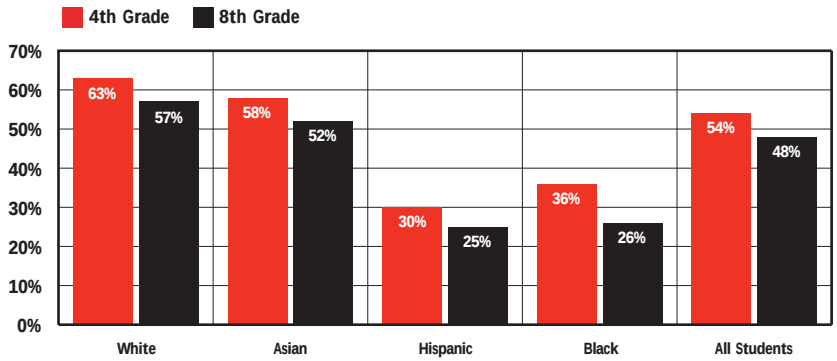
Family risk factors, such as poverty, language barriers and low maternal education negatively impact student achievement in mathematics.[4] Students with insufficient math skills will have fewer opportunities to pursue post-secondary education and secure high-level employment than their peers.[5]

Frequent engagement in classroom activities, such as doing math problems from a textbook, talking to others about how to solve math problems and using a calculator are associated with higher scores on assessments particularly for older students.[6] Students' achievement in math is highest when they are taught by teachers with strong backgrounds and training in math.[7]

Nationally and in Rhode Island, gaps in math performance exist between low-income children and higher-income children.[8] In Rhode Island in 2007, 36% of low-income fourth-grade students were proficient in math compared to 68% of higher-income fourth-grade students. Twenty-nine percent of low-income eighth-grade students were proficient in math compared to 60% of higher-income eighth-grade students.[8,9]

Achieving math proficiency for all students requires that changes be made in curriculum, instructional materials, assessments, classroom practice, teacher preparation and professional development.[10]

4th and 8th Grade Math Proficiency Levels
Rhode Island Public Schools, October 2007



Source: Rhode Island Department of Elementary and Secondary Education, New England Common Assessment Program, October 2007.

◆ In October 2007, 54% of Rhode Island fourth graders and 48% of eighth graders scored at or above proficiency in math. Black and Hispanic students scored significantly lower than their White and Asian counterparts. Both fourth-grade and eighth-grade students in the core cities scored about 20 percentage points below the state average while students in the remainder of the state scored approximately 10 percentage points above the state average.[11]

◆ In Rhode Island in 2007, 26% of fourth-grade students with disabilities were proficient in math compared to 60% without disabilities, and 14% of eighth-grade students with disabilities were proficient in math compared to 56% of students without disabilities.[12]

National Assessment of Educational Progress

◆ Eighty percent of Rhode Island fourth-graders performed at or above the Basic level in math on the 2007 National Assessment of Educational Progress (NAEP), compared with 81% nationally. Sixty-six percent of Rhode Island eighth-graders performed at or above the Basic level in math, compared with 70% nationally.[13]

◆ Students performing at the Basic level have shown partial mastery of prerequisite knowledge and skills that are fundamental for proficient grade-level work.[14]

Table 41. **Fourth and Eighth Grade Math Proficiency, Rhode Island, October 2007**

SCHOOL DISTRICT	FOURTH GRADE # OF TEST TAKERS	FOURTH GRADE % OF STUDENTS WHO SCORED AT OR ABOVE THE PROFICIENCY LEVEL	EIGHTH GRADE # OF TEST TAKERS	EIGHTH GRADE % OF STUDENTS WHO SCORED AT OR ABOVE THE PROFICIENCY LEVEL
Barrington	247	83%	299	89%
Bristol-Warren	252	72%	277	60%
Burrillville	165	55%	212	55%
Central Falls	270	33%	267	23%
Chariho	263	68%	293	59%
Coventry	411	70%	479	61%
Cranston	789	58%	901	45%
Cumberland	369	53%	431	57%
East Greenwich	200	72%	216	75%
East Providence	450	52%	469	49%
Exeter-West Greenwich	140	59%	167	69%
Foster	58	66%	NA	NA
Foster-Glocester	NA	NA	221	58%
Glocester	132	61%	NA	NA
Jamestown	45	69%	57	75%
Johnston	269	52%	273	51%
Lincoln	261	71%	285	60%
Little Compton	33	70%	38	71%
Middletown	172	68%	174	72%
Narragansett	78	63%	136	65%
New Shoreham	10	90%	7	NA
Newport	171	39%	178	42%
North Kingstown	322	71%	351	63%
North Providence	222	50%	272	30%
North Smithfield	139	73%	147	43%
Pawtucket	650	46%	754	36%
Portsmouth	197	64%	260	73%
Providence	1,875	26%	1,851	24%
Scituate	157	69%	143	66%
Smithfield	195	81%	226	71%
South Kingstown	262	71%	318	78%
Tiverton	154	75%	157	53%
Warwick	822	65%	877	47%
West Warwick	254	50%	297	49%
Westerly	245	68%	279	60%
Woonsocket	518	44%	442	17%
Charter Schools	*214*	*44%*	*87*	*36%*
UCAP	*NA*	*NA*	*59*	*10%*
Core Cities	*3,738*	*35%*	*3,789*	*28%*
Remainder of State	*7,059*	*65%*	*7,965*	*58%*
Rhode Island	*11,011*	*54%*	*11,900*	*48%*

Source of Data for Table/Methodology

Due to the adoption of a new assessment tool by the Rhode Island Department of Elementary and Secondary Education, Math Skills in the Factbook cannot be compared with Factbooks prior to 2007.

All data are from the Rhode Island Department of Elementary and Secondary Education, *New England Common Assessment Program (NECAP)*, October 2007.

Only students who actually took the test are counted in the district's or school's proficiency rate. All enrolled students are eligible unless their IEP specifically exempts them or unless they are beginning English-Language Learners.

Core cities are Central Falls, Newport, Pawtucket, Providence, West Warwick and Woonsocket.

Charter schools include CVS Highlander School, Paul Cuffee Charter School, Kingston Hill Academy, International Charter School, and Compass Charter School. Charter schools are not included in the core city and remainder of state calculations.

NA indicates that the school district does not serve students at that grade level or that the number of students was too small to report.

References

[1,6] National Center for Education Statistics. (2001). *The nation's report card: Mathematics 2000.* Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics.

[2] *The Rhode Island High School Diploma System.* (2005). Providence, RI: Rhode Island Department of Elementary and Secondary Education.

[3,10] National Research Council. (2005). *Adding it up: Helping children learn mathematics.* Mathematics Learning Study Committee, Center for Education, Division of Behavioral and Social Sciences and Education. Washington, DC: National Academy Press.

[4] National Center for Education Statistics. (2004). *The condition of education 2004* (NCES 2004-007). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics.

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