

Math Skills

DEFINITION

Math skills is the percentage of third-, fourth-, fifth-, sixth-, and seventh-grade students who met expectations for math on the *Partnership for Assessment of Readiness for College and Careers (PARCC)* test.

SIGNIFICANCE

Students must rely on math to perform everyday activities, advance their education, and navigate today's technological world. Strong math skills predict higher college attendance and success rates and increase students' employability.¹² Improving education in the STEM disciplines (science, technology, engineering, and math) can spur national innovation and competitiveness and ensure that we have qualified workers for the growing STEM industries.³

State, national, and international assessments show that U.S. students fare well when asked to perform straight-forward computational procedures but they tend to have a limited understanding of basic mathematical concepts needed to solve simple problems. After two decades of improvement, performance in math in the U.S. has begun to level off.^{4,5,6}

Family risk factors such as poverty and low parental education levels are associated with low student achievement in math. Disparities in math

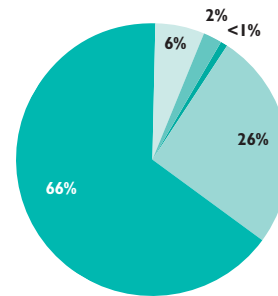
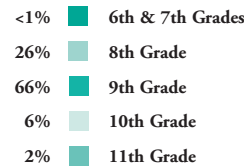
achievement related to race and family income persist in the U.S.⁷ Opportunities for high-quality math instruction are especially important for low-income children. Low-income children demonstrate lower levels of math skills before entering school and the gaps continue and even widen throughout their time in school.⁸

Achieving math proficiency for all students requires that improvements be made in curriculum, instructional materials, assessments, classroom practice, teacher preparation, and professional development.^{9,10} Early warning and intervention systems that identify students struggling with math can provide personalized and timely academic support.¹¹

The *National Assessment of Educational Progress (NAEP)* measures proficiency in math and other subjects nationally and across states every other year.¹² In 2015, 80% of Rhode Island fourth graders and 81% of U.S. fourth graders performed at or above the Basic level in math on the *NAEP*, and 72% of Rhode Island eighth graders and 70% of U.S. eighth graders performed at or above the Basic level in math on the *NAEP*.^{13,14} Rhode Island is one of only eight states that saw decreases in both fourth- and eighth-grade math achievement between 2013 and 2015 as measured by the *NAEP* math tests.¹⁵

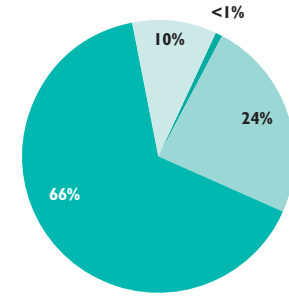
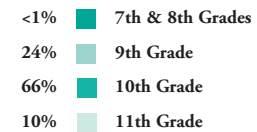
Algebra and Geometry PARCC Test Takers by Grade, Rhode Island, 2015

Algebra PARCC, 2015



n=9,465

Geometry PARCC, 2015



n=7,882

Source: RIDE, *Rhode Island's PARCC Results for Students in Grade 3 through 8 and High School, 2015*.

- ◆ Rhode Island administers the math *PARCC* to students annually in grades three through eight and gives course-based assessments to students who have completed algebra and geometry, in whichever grade those courses are completed.^{16,17}
- ◆ More than one-quarter (26%) of eighth graders took the algebra assessment rather than the standard math assessment, so the eighth grade math results do not reflect the overall performance of Rhode Island's eighth graders.¹⁸

Statewide Assessments of Math

- ◆ Starting in the 2014-2015 school year, Rhode Island began using a new statewide assessment, the *Partnership for Assessment of Readiness for College and Careers (PARCC)*, which is aligned to the *Common Core State Standards* in math and assesses students' ability to demonstrate mathematical reasoning and apply mathematical concepts to solve complex, real-world problems.^{19,20}

Table 47.

Third- Fourth-, Fifth-, Sixth-, & Seventh-Grade Students Meeting Expectations in Math, Rhode Island, 2015

SCHOOL DISTRICT	% OF STUDENTS MEETING EXPECTATIONS				
	THIRD GRADE	FOURTH GRADE	FIFTH GRADE	SIXTH GRADE	SEVENTH GRADE
Barrington	67%	47%	65%	49%	60%
Bristol Warren	46%	35%	34%	40%	34%
Burrillville	28%	21%	18%	16%	24%
Central Falls	12%	7%	4%	6%	1%
Chariho	49%	56%	39%	37%	43%
Coventry	42%	29%	37%	24%	28%
Cranston	39%	24%	25%	29%	22%
Cumberland	62%	43%	53%	32%	34%
East Greenwich	58%	44%	49%	55%	70%
East Providence	39%	22%	29%	21%	16%
Exeter-West Greenwich	61%	38%	43%	43%	48%
Foster	43%	26%	32%	NA	NA
Glocester	55%	48%	61%	NA	NA
Foster-Glocester	NA	NA	NA	34%	37%
Jamestown	55%	52%	47%	55%	59%
Johnston	31%	39%	30%	20%	16%
Lincoln	54%	36%	41%	24%	30%
Little Compton	55%	40%	46%	36%	55%
Middletown	49%	34%	30%	48%	33%
Narragansett	58%	42%	41%	51%	50%
New Shoreham	*	*	*	25%	*
Newport	34%	22%	21%	27%	22%
North Kingstown	56%	44%	45%	47%	51%
North Providence	34%	29%	15%	12%	14%
North Smithfield	41%	48%	32%	26%	34%
Pawtucket	25%	14%	21%	14%	11%
Portsmouth	59%	39%	30%	40%	53%
Providence	14%	11%	9%	10%	8%
Scituate	45%	45%	47%	30%	32%
Smithfield	50%	36%	30%	24%	43%
South Kingstown	74%	70%	43%	58%	47%
Tiverton	55%	31%	28%	38%	48%
Warwick	35%	25%	26%	34%	21%
West Warwick	23%	14%	19%	22%	25%
Westerly	41%	32%	11%	27%	24%
Woonsocket	21%	11%	18%	10%	7%
Charter Schools	46%	31%	27%	21%	20%
State-Operated Schools	NA	NA	NA	NA	NA
UCAP	NA	NA	NA	NA	0%
Four Core Cities	17%	12%	13%	11%	8%
Remainder of State	46%	34%	33%	33%	33%
Rhode Island	36%	27%	27%	26%	25%

Source of Data for Table/Methodology

Data are from the Rhode Island Department of Education, *Partnership for Assessment of Readiness for College and Careers (PARCC)*, Spring 2015.

Due to the adoption of a new assessment tool by the Rhode Island Department of Education in the 2014-2015 school year, Math Skills in this Factbook cannot be compared with previous Factbooks.

The number of students who met or exceeded expectations received a score of four or five on the math section of the *PARCC* assessment, respectively. Only students who actually took the test are counted in district or school denominators. All enrolled students are eligible unless their Individualized Education Program (IEP) specifically exempts them or unless they are beginning English Language Learners.

Core cities are Central Falls, Pawtucket, Providence, and Woonsocket.

2015 *PARCC* data for independent charter schools include Blackstone Valley Prep Mayoral Academy, Highlander Charter School, International Charter School, Kingston Hill Academy, The Learning Community, Paul Cuffee Charter School, The Compass School, Segue Institute for Learning, and Trinity Academy for the Performing Arts.

Charter schools and the Urban Collaborative Accelerated Program (UCAP) are not included in the four core cities and remainder of state calculations.

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

References

^{1,5,7} Child Trends. (2013). *Mathematics proficiency*. Retrieved February 23, 2015, from www.childtrendsdatabank.org

² RI DataHub. (n.d.). *Data story: Math preparation and postsecondary success*. Retrieved March 3, 2016, from ridatahub.org

³ Federal Coordination in STEM Education Task Force. (2012). *Coordinating federal science, technology, engineering, and mathematics (STEM) education investments: Progress report*. Washington, DC: Committee on STEM Education, National Science and Technology Council. Retrieved March 3, 2016, from www.whitehouse.gov

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