

Math Skills

DEFINITION

Math skills is the percentage of third- and eighth-grade students who met expectations for math on the *Rhode Island Comprehensive Assessment System (RICAS)* 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.^{1,2} 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 with straight-forward computational procedures but tend to have a limited understanding of basic mathematical concepts, resulting in federal actions to increase the level of rigor, depth, and coherency of the mathematics content taught nationwide.^{4,5} After two decades of improvement, math performance in the U.S. leveled off and has now begun to decline.⁶

Poverty and low parental education levels can impact student performance on math assessments. Disparities in

math proficiency related to race and family income persist in the U.S and worsen as students advance in grade level.⁷ Opportunities for advanced math instruction are especially important for low-income children, who may be exposed to less complex math concepts.⁸

Achieving math proficiency for all students requires that improvements be made in curriculum, instructional materials, assessments, classroom practice, teacher preparation, and professional development. These are particularly important as Rhode Island continues to implement new, more rigorous math standards.^{9,10} Teachers should expose all students to challenging and culturally relevant math concepts and curriculum and provide additional support to struggling students.¹¹

The *National Assessment of Educational Progress (NAEP)* measures proficiency in math and other subjects nationally and across states every other year.¹² In 2022, 34% of Rhode Island fourth graders and 35% of U.S. fourth graders performed at or above the Proficient level in math on the *NAEP*, and 24% of Rhode Island eighth graders and 26% of U.S. eighth graders performed at or above the Proficient level in math on the *NAEP*.^{13,14} Between 2011 and 2022, Rhode Island saw decreases in fourth- and eighth-grade math proficiency as measured by the *NAEP* math tests with the biggest declines from 2019 to 2022, during the COVID-19 pandemic.^{15,16}



Third- & Eighth-Grade Students Meeting Expectations on the RICAS Math Assessment, Rhode Island, 2023

SUBGROUP	THIRD GRADE	EIGHTH GRADE
Female Students	31%	22%
Male Students	38%	24%
*Multilingual Learners	13%	<5%
Non-English Learners	39%	26%
*Students Receiving Special Education Services	12%	<5%
Students Not Receiving Special Education Services	40%	27%
Low-Income Students	19%	9%
Higher-Income Students	49%	34%
Asian Students ⁺	56%	36%
Black Students	19%	9%
Hispanic/Latino Students	20%	10%
Native American Students	10%	6%
Native Hawaiian/Pacific Islander Students	11%	9%
White Students	45%	33%
*Homeless Students	12%	<5%
Students in Foster Care	14%	7%
ALL STUDENTS	35%	23%

Source: Rhode Island Department of Education, *Rhode Island Comprehensive Assessment System (RICAS)*, 2022-2023. Low-income status is determined by eligibility for the free or reduced-price lunch program. *Data is reported as <5% when more than 95% of students did not meet expectations. +Data for Asian students is not disaggregated by ethnic group. National research shows large academic disparities across Asian ethnic groups.

★ During the COVID-19 pandemic, the percentage of Rhode Island students meeting expectations in math for third graders declined from 36% in 2019 to 25% in 2021 and has increased to 35% in 2023, while for eighth graders it declined from 24% in 2019 to 16% in 2021 and has increased to 23% in 2023.^{17,18,19}

★ In Rhode Island in the 2022-2023 school year, 19% of low-income third graders met expectations in math, compared with 49% of higher-income third graders. There also were large gaps by race and ethnicity, with 56% of Asian and 45% of white third graders meeting expectations, compared with 19% of Black, 20% of Hispanic, 10% of Native American, and 11% of Native Hawaiian/Pacific Islander students. This large gap is also seen in eighth-grade results.²⁰

★ In 2023, 14% of third graders in foster care met expectations in math and 7% of eighth graders who were in foster care met expectations in math.²¹

Table 47. Third- & Eighth-Grade Students Meeting Expectations in Math, Rhode Island, 2022-2023

SCHOOL DISTRICT	# OF THIRD GRADERS TESTED	% OF THIRD GRADERS MEETING EXPECTATIONS	# OF EIGHTH GRADERS TESTED	% OF EIGHTH GRADERS MEETING EXPECTATIONS
Barrington	210	63%	265	63%
Bristol Warren	202	52%	205	41%
Burrillville	151	30%	162	14%
Central Falls	180	<5%	208	<5%
Charlho	213	59%	212	33%
Coventry	286	47%	315	29%
Cranston	700	30%	800	20%
Cumberland	330	64%	336	51%
East Greenwich	172	70%	215	56%
East Providence	342	43%	387	19%
Exeter-West Greenwich	104	41%	108	45%
Foster	41	24%	NA	NA
Foster-Glocester	NA	NA	142	30%
Glocester	101	60%	NA	NA
Jamestown	37	89%	40	60%
Johnston	214	29%	258	15%
Lincoln	262	44%	249	36%
Little Compton	18	83%	26	31%
Middletown	138	30%	157	26%
Narragansett	60	68%	76	55%
New Shoreham	13	8%	*	*
Newport	147	17%	131	6%
North Kingstown	269	58%	246	52%
North Providence	263	26%	282	28%
North Smithfield	108	57%	137	55%
Pawtucket	604	25%	647	<5%
Portsmouth	142	47%	151	50%
Providence	1,555	21%	1,478	6%
Scituate	98	53%	85	27%
Smithfield	168	43%	163	44%
South Kingstown	179	54%	212	25%
Tiverton	126	63%	124	40%
Warwick	566	30%	611	12%
West Warwick	248	8%	256	14%
Westerly	164	40%	190	21%
Woonsocket	452	16%	403	5%
Charter Schools	927	25%	713	23%
UCAP	NA	NA	71	<5%
Four Core Cities	2,791	25%	2,736	4%
Remainder of State	6,072	40%	6,550	31%
Rhode Island	9,790	34%	10,070	23%

Source of Data for Table/Methodology

Data are from the Rhode Island Department of Education (RIDE), *Rhode Island Comprehensive Assessment System (RICAS)*, 2022-2023 and is rounded to the nearest percentage point.

Due to the adoption of a new assessment tool by RIDE in 2018, *Math Skills* cannot be compared with Factbooks prior to 2019.

% meeting expectations are students who met or exceeded expectations on the math section of the *RICAS*. Only students who actually took the test are counted in the denominator for the district and school proficiency rates. All students are expected to participate in the *RICAS* assessment. Students with significant disabilities may be eligible to participate in alternate assessments.

Data is reported as <5% when greater than 95% of students did not meet expectations in this category. Actual numbers are not shown to protect student confidentiality. These students are still counted in district totals and four core cities, remainder of the state, and state totals.

*Data is not reported because the number of students tested was less than 10. These students are still counted in the remainder of the state and state totals.

RICAS data for independent charter schools include Achievement First, Beacon Charter School, Blackstone Valley Prep Mayoral Academy, The Compass School, Paul Cuffee Charter School, Highlander Charter School, The Hope Academy, International Charter School, Kingston Hill Academy, The Learning Community, RISE Prep Mayoral Academy, Segue Institute for Learning, SouthSide Charter School, and Trinity Academy for the Performing Arts.

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

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

NA indicates that the school district does not serve students at that grade level.

Data is not reported for the Rhode Island School for the Deaf because the number of students tested was less than 10. These students are still counted in the remainder of state and state totals.

(References are on page 189)