

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 recent 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, 2022

SUBGROUP	THIRD GRADE	EIGHTH GRADE
Female Students	33%	20%
Male Students	37%	22%
*Multilingual Learners/English Learners	14%	<5%
Non-English Learners	39%	24%
*Students Receiving Special Education Services	12%	<5%
Students Not Receiving Special Education Services	40%	24%
Low-Income Students	18%	8%
Higher-Income Students	50%	31%
Asian Students ⁺	56%	37%
Black Students	23%	7%
Hispanic/Latino Students	18%	9%
Native American Students	14%	6%
White Students	46%	29%
*Homeless Students	11%	<5%
Students in Foster Care	9%	6%
ALL STUDENTS	35%	21%

Source: Rhode Island Department of Education, *Rhode Island Comprehensive Assessment System (RICAS)*, 2021-2022. 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 then increased to 35% in 2022, while for eighth graders it declined from 24% in 2019 to 16% in 2021 and then increased to 21% in 2022.^{17,18,19}
- ◆ In Rhode Island in the 2021-2022 school year, 18% of low-income third graders met expectations in math, compared with 50% of higher-income third graders. There also were large gaps by race and ethnicity, with 56% of Asian and 46% of white third graders meeting expectations, compared with 23% of Black, 18% of Hispanic, and 14% of Native American students. This large gap is also seen in eighth-grade results, with 37% of Asian and 29% of white eighth graders meeting expectations, compared with 7% of Black, 9% of Hispanic, and 6% Native American students.²⁰
- ◆ In 2022, 9% of third graders in foster care met expectations in math and 6% of eighth graders who were in foster care met expectations in math.²¹

Table 48.

Third & Eighth Grade Students Meeting Expectations in Math, Rhode Island, 2021-2022

SCHOOL DISTRICT	# OF THIRD GRADERS TESTED	% OF THIRD GRADERS MEETING EXPECTATIONS	# OF EIGHTH GRADERS TESTED	% OF EIGHTH GRADERS MEETING EXPECTATIONS
Barrington	240	71%	277	60%
Bristol Warren	213	42%	233	33%
Burrillville	149	37%	164	7%
Central Falls	160	6%	189	<5%
Chariho	207	52%	246	38%
Coventry	292	48%	316	25%
Cranston	733	30%	816	13%
Cumberland	345	64%	339	44%
East Greenwich	174	62%	182	65%
East Providence	325	40%	376	10%
Exeter-West Greenwich	104	51%	121	28%
Foster	29	21%	NA	NA
Foster-Glocester	NA	NA	147	27%
Glocester	94	62%	NA	NA
Jamestown	55	73%	47	55%
Johnston	233	33%	247	17%
Lincoln	223	53%	254	47%
Little Compton	19	79%	23	30%
Middletown	141	36%	142	35%
Narragansett	61	77%	73	44%
New Shoreham	10	20%	10	20%
Newport	119	20%	127	<5%
North Kingstown	260	60%	269	40%
North Providence	229	23%	279	27%
North Smithfield	108	56%	132	44%
Pawtucket	618	29%	698	7%
Portsmouth	162	48%	171	40%
Providence	1,644	17%	1,697	6%
Scituate	88	63%	84	30%
Smithfield	164	49%	188	39%
South Kingstown	198	48%	190	26%
Tiverton	107	66%	127	25%
Warwick	580	30%	648	12%
West Warwick	254	6%	246	13%
Westerly	156	35%	190	27%
Woonsocket	417	17%	366	6%
<i>Charter Schools</i>	<i>845</i>	<i>31%</i>	<i>652</i>	<i>16%</i>
<i>UCAP</i>	<i>NA</i>	<i>NA</i>	<i>77</i>	<i><5%</i>
<i>Four Core Cities</i>	<i>2,839</i>	<i>19%</i>	<i>2,950</i>	<i>6%</i>
<i>Remainder of State</i>	<i>6,075</i>	<i>43%</i>	<i>6,595</i>	<i>28%</i>
<i>Rhode Island</i>	<i>9,759</i>	<i>35%</i>	<i>10,274</i>	<i>21%</i>

Source of Data for Table/Methodology

Data are from the Rhode Island Department of Education (RIDE), *Rhode Island Comprehensive Assessment System (RICAS)*, 2021-2022 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. Due to low participation rates, *Rhode Island Comprehensive Assessment System (RICAS)*, 2020-2021 math scores cannot be compared to previous years.

% 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.

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 and the remainder of state calculations.

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

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