

# NH's Report Card

## 2019 NAEP Results in Math and Reading



October 30, 2019

## WHAT IS NAEP?

The National Assessment of Educational Progress (NAEP), first administered in 1969, is the largest continuing and nationally representative assessment of what our nation's students know and can do in subjects such as mathematics, reading, science, and writing. Teachers, principals, parents, policymakers, and researchers all use NAEP results to assess progress and develop ways to improve education in the United States. The results of NAEP are released as The Nation's Report Card, and are available for the nation, states, and in some cases, urban districts. NAEP is a congressionally mandated project administered by the National Center for Education Statistics (NCES), within the U.S. Department of Education and the Institute of Education Sciences (IES).

Federal Law specifies that NAEP is voluntary for every student, school, school district, and state. However, federal law also requires all states that receive Title I funds to participate in NAEP reading and mathematics assessments at fourth and eighth grades. Similarly, school districts that receive Title I funds and are selected for the NAEP sample are also required to participate in NAEP reading and mathematics assessments at fourth and eighth grades. All other NAEP assessments are voluntary.

Full results can be found here:

<https://www.nationsreportcard.gov/ndecore/xplore/nde>

## HOW ARE SCORES CALCULATED?

NAEP assessment results for reading and mathematics are reported as average scores on a 0-500 scale. Scale scores for individual students, schools, and school districts are not reported, but summary statistics describing scale scores for groups of students by demographic group, gender, and race/ethnicity are reported by state.

NAEP achievement levels are set by the National Assessment Governing Board based on the collective judgments of a broadly representative panel of teachers, education specialists, and members of the general public.<sup>1</sup>

## WHAT DOES THIS YEAR'S REPORT CARD SHOW?

This year's NAEP results show a drop in proficiency levels, both nationwide and New Hampshire. New Hampshire's NAEP results continue to be above the national average, but have seen a drop in Math and Reading, both in 4<sup>th</sup> Grade and 8<sup>th</sup> Grade NAEP results.

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<sup>1</sup> National Center for Education Statistics, [https://nces.ed.gov/nationsreportcard/guides/scores\\_achv.aspx](https://nces.ed.gov/nationsreportcard/guides/scores_achv.aspx)



# 2019 NAEP RESULTS

NAEP Gr 4 Math Average Scale Scores

	2003	2005	2007	2009	2011	2013	2015	2017	2019
Nat.	244	248	249	250	252	254	253	252	240
NH	247	249	251	255	256	258	255	252	245
F & R	229	232	236	237	241	239	236	231	232
SD	222	227	230	231	230	231	227	218	217
Prof. Score	249	249	249	249	249	249	249	249	249

NAEP Gr 8 Math Average Scale Scores

	2003	2005	2007	2009	2011	2013	2015	2017	2019
Nat.	287	288	291	294	296	297	296	296	281
NH	289	288	291	296	297	301	300	300	287
F & R	268	271	271	276	276	279	275	273	270
SD	258	258	258	264	262	265	262	261	256
Prof. Score	299	299	299	299	299	299	299	299	299

NAEP Gr 4 Reading Average Scale Scores

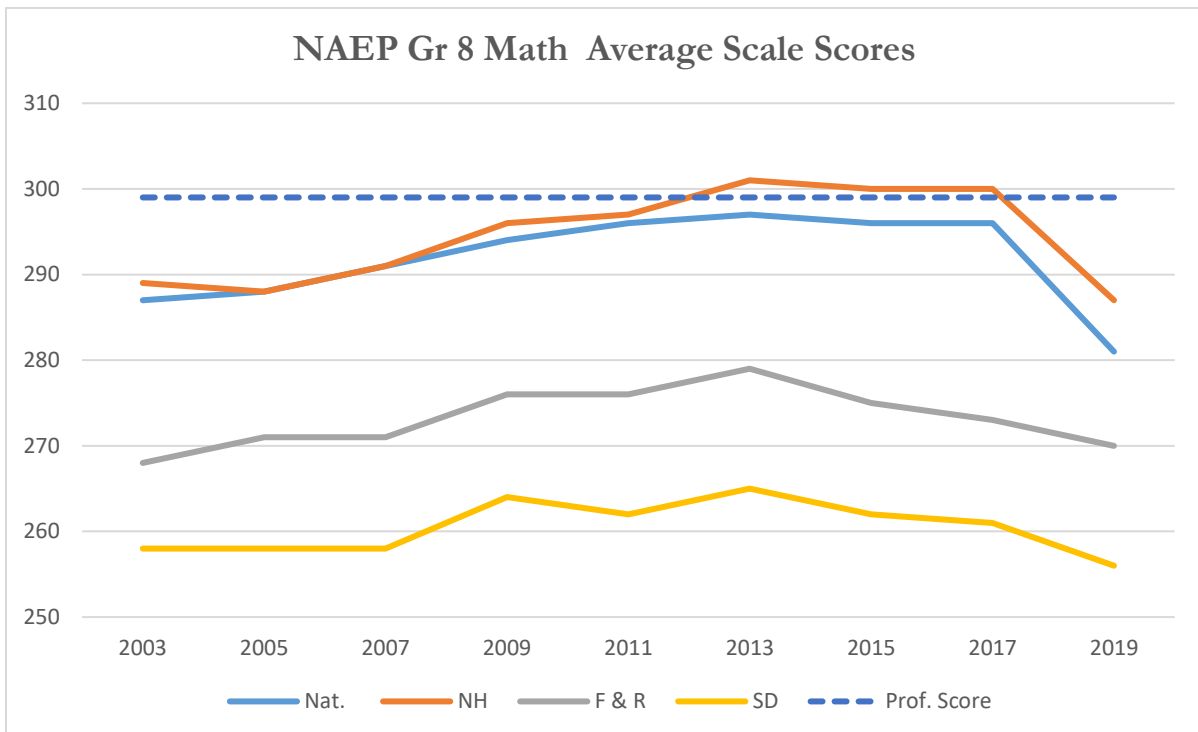
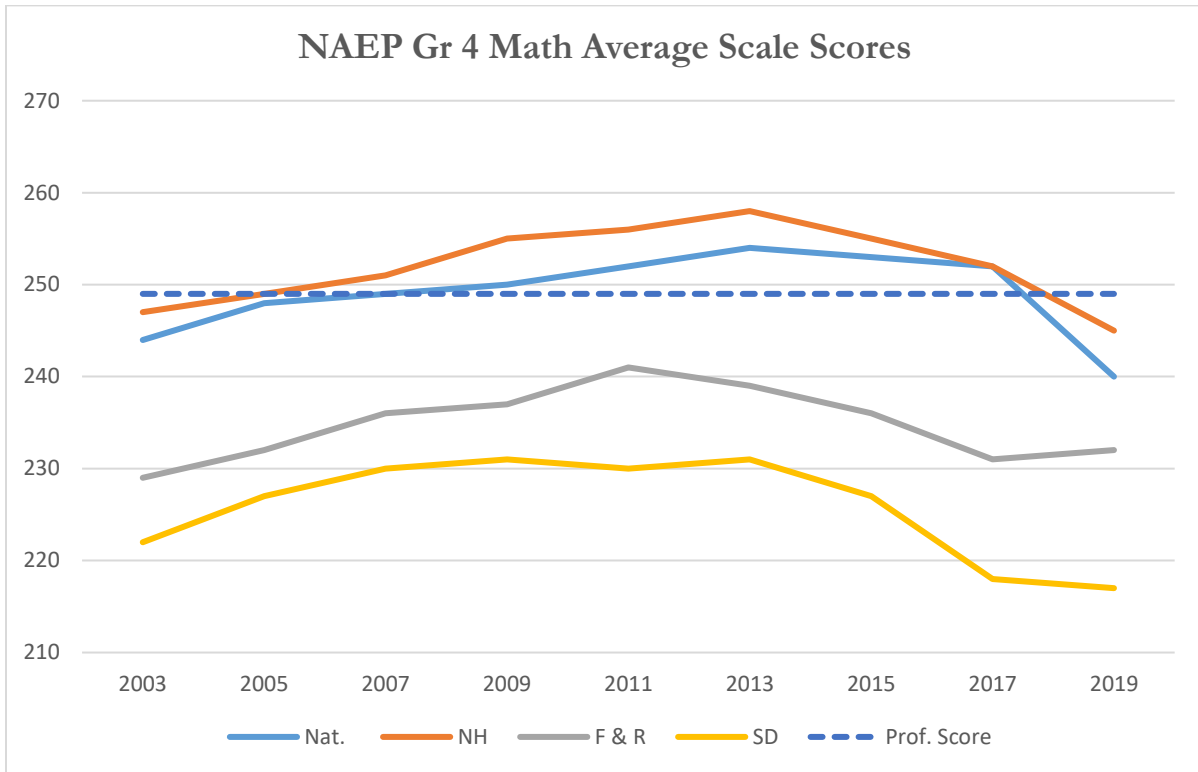
	2003	2005	2007	2009	2011	2013	2015	2017	2019
Nat.	229	230	232	232	235	236	237	236	219
NH	233	231	233	234	236	238	238	236	224
F & R	206	213	212	213	216	216	216	212	208
SD	194	198	199	201	197	199	198	196	190
Prof. Score	238	238	238	238	238	238	238	238	238

NAEP Gr 8 Reading Average Scale Scores

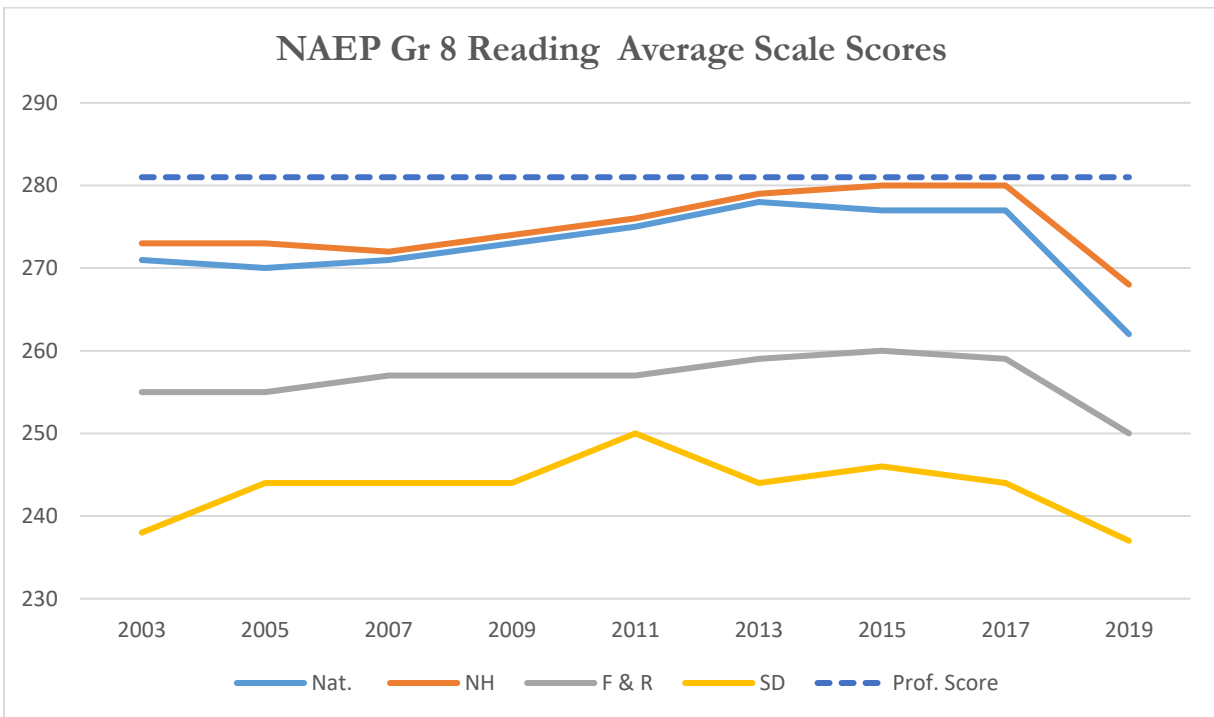
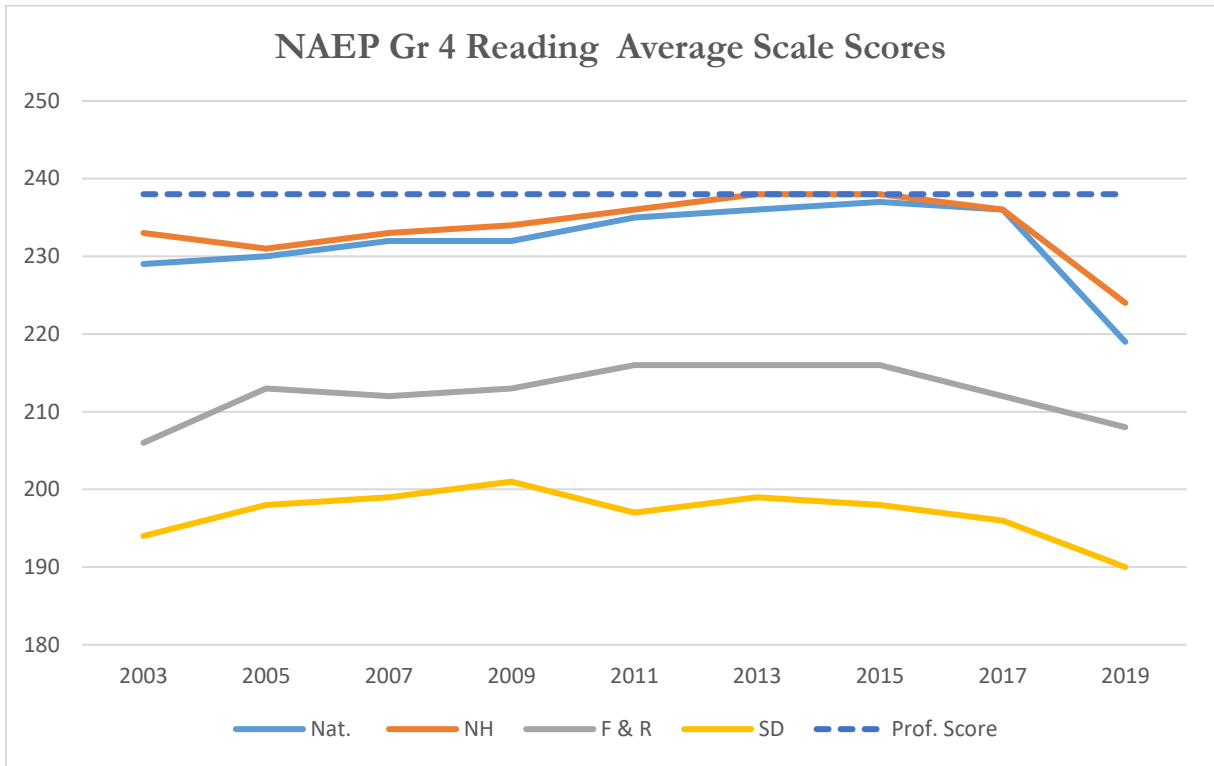
	2003	2005	2007	2009	2011	2013	2015	2017	2019
Nat.	271	270	271	273	275	278	277	277	262
NH	273	273	272	274	276	279	280	280	268
F & R	255	255	257	257	257	259	260	259	250
SD	238	244	244	244	250	244	246	244	237
Prof. Score	281	281	281	281	281	281	281	281	281



# 2019 NAEP MATH RESULTS



# 2019 NAEP READING RESULTS

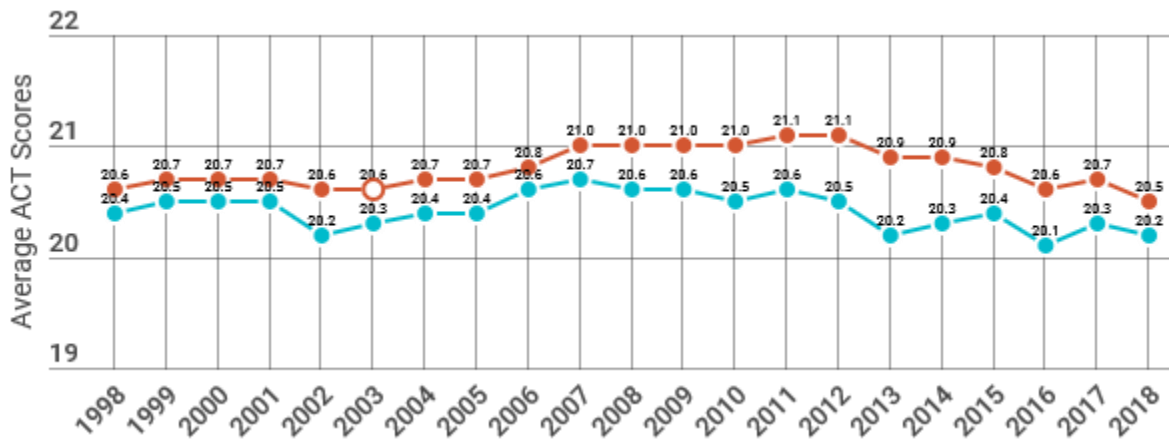


## TREADING WATER

By tracking New Hampshire's NAEP results going back to 2003, we can see how student performance has progressed. The above graphs show similar trends across grades and subjects; gradual improvements from 2003 to 2013, with steady declines over the past six years. Curiously, while correlation does not equal causation, this downward trend follows the adoption of the Common Core Standards across the country. One conclusion is crystal clear: fewer New Hampshire students are achieving academic proficiency. We must do better.

This year's NAEP results are disappointing, and even more so because they add to a troubling trend mirrored in other state and national assessments over the past decade. Across grades and subjects, student performance is not improving. And in some areas, performance is falling.

As reported last year in Education Week, "The newest batch of ACT scores shows troubling long-term declines in performance, with students' math achievement reaching a 20-year low."<sup>2</sup>



During a recent State Of Our Schools address at NHTI, U.S. Deputy Secretary of Education Mick Zais says that last year's NAEP results found, "Two-thirds of American 8<sup>th</sup> graders are not proficient in any core subject."

Zais also says American students are falling behind the rest of the world. PISA (Program for International Student Assessment) is a standardized test given to 15-year-olds in 70 countries. Zais studied the results going back to 2000, and says our national ranking has fallen steadily.

"Our 15-year olds are 24<sup>th</sup> in the world in reading comprehension, behind such countries as Estonia and New Zealand. Our students are 25<sup>th</sup> in their knowledge of

<sup>2</sup> "Education Week, "Math Scores Slide to a 20-Year Low on ACT", Catherine Gewertz, October 17, 2018.



science, behind Slovenia and Vietnam. Our students are 40<sup>th</sup> in their understanding of math, behind Russia and Malta.”

The preliminary results from this year’s New Hampshire assessment tests also show roughly half of Granite State students reaching proficiency in English and Language, Arts, Math, and Science. This demonstrates that our current education delivery system is working for some students, but not all. In fact, in some cases proficiency rates drop as students move up through school.

By tracking student assessment results by graduating class, we can see whether student performance is improving, or falling, as they progress. Sadly, the results show little movement. And the drop in math proficiency as students move from elementary through middle school is particularly troubling.

## NH Assessment Results by Year

Percent of Students Scoring Proficient or Above  
 \*11<sup>th</sup> grade switch to SAT ^3<sup>rd</sup>-8<sup>th</sup> grade switch to SAS

ELA							
Year	3rd	4th	5th	6th	7th	8th	11th
2014-15	55%	56%	63%	57%	62%	58%	59%
2015-16*	56%	57%	63%	59%	62%	62%	66%
2016-17	54%	56%	61%	57%	61%	58%	66%
2017-18^	54%	55%	61%	55%	60%	58%	66%
2018-19	52%	55%	57%	56%	57%	53%	64%

Math							
Year	3rd	4th	5th	6th	7th	8th	11th
2014-15	53%	49%	45%	46%	50%	44%	37%
2015-16	57%	51%	48%	47%	52%	47%	40%
2016-17	55%	51%	47%	46%	50%	45%	44%
2017-18	55%	53%	45%	46%	48%	47%	42%
2018-19	57%	52%	43%	47%	47%	45%	43%

Science			
Year	5 <sup>th</sup>	8 <sup>th</sup>	11th
2017-18	43%	42%	41%
2018-19	38%	39%	41%



# NH Assessments Results by Class

Percent of Students Scoring Proficient or Above

ELA by Graduating Class						
Class of	3rd	4th	5th	6th	7th	8th
2019						58%
2020					62%	62%
2021				57%	62%	58%
2022			63%	59%	61%	58%
2023		56%	63%	57%	60%	53%
2024	55%	57%	61%	55%	57%	
2025	56%	56%	61%	56%		
2026	54%	55%	57%			
2027	54%	55%				
2028	52%					

Math by Graduating Class						
Class of	3rd	4th	5th	6th	7th	8th
2019						44%
2020					50%	47%
2021				46%	52%	45%
2022			45%	47%	50%	47%
2023		49%	48%	46%	48%	45%
2024	53%	51%	47%	46%	47%	
2025	57%	51%	45%	47%		
2026	55%	53%	43%			
2027	55%	52%				
2028	57%					

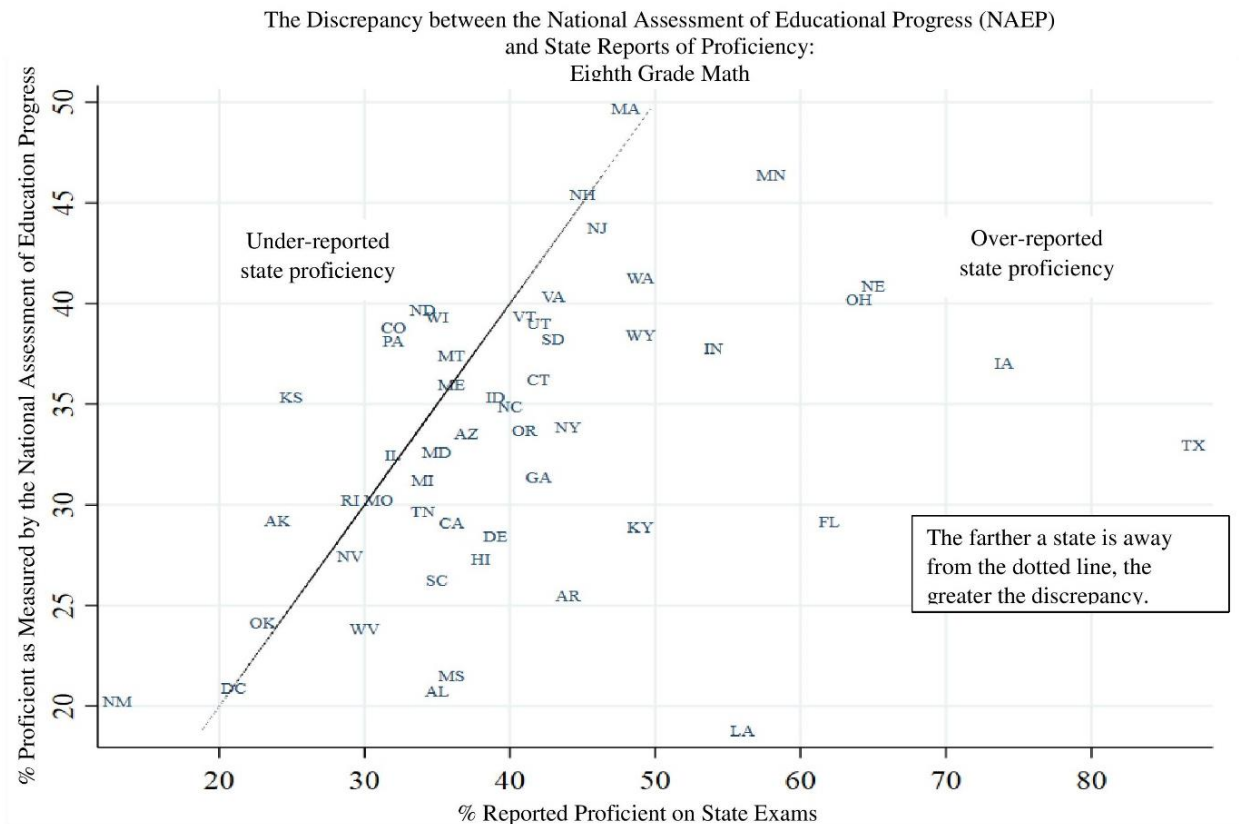




## Integrity of Assessments

Another benefit of NAEP is that it provides us a benchmark to gauge our statewide assessments. If our state assessment results show similar proficiency as NAEP, we can have higher confidence that we are accurately measuring student performance. If our state proficiency results are significantly higher than NAEP, we would have cause to doubt our own assessments.

Fortunately, a comparison of New Hampshire's assessments to past NAEP results shows a high correlation. The below chart of 8<sup>th</sup> Grade Math results, as one example, shows nearly identical proficiency levels of state and NAEP assessments. Several states report very high proficiency on their own tests, but show much lower levels on NAEP.



Sources: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2017 Reading Assessment.

U.S. Department of Education, National Center for Education Statistics, EDFacts: extract of Data Groups 583 (Academic Achievement in Mathematics) and 584 (Academic Achievement in Reading/Language Arts), collected from state education agencies between December 2017 and April 2018, extracted from the EDFacts Data Warehouse and organized into an internal file on April 12, 2018



## ALTERNATIVES

If the status quo is failing to help roughly one half of New Hampshire students reach proficiency, aren't we obligated to explore alternatives? We should look for better ways to reach more students.

A recent episode of the Freakonomics podcast, "America's Math Curriculum Doesn't Add Up," questioned whether it was time to move on from a "Sputnik era" focus on algebra and geometry in favor of data fluency.<sup>3</sup> This does not mean we abandon calculus and engineering for students with an interest in higher-level mathematics. But today's students are far more likely to require expertise in reading, analyzing, and manipulating data when they become tomorrow's workers. LinkedIn's 2018 Emerging Jobs report found that seven of the ten fastest-growing jobs categories in the country were data-centered.<sup>4</sup>

Professor Jo Boaler, a professor of mathematics at Stanford University, argues the way we teach math, starting around the 8<sup>th</sup> grade, is outdated and unsuited to the 21<sup>st</sup> Century.

"It was a long time ago that somebody in the U.S. decided to teach what I think of as the geometry sandwich — a course of algebra for a whole year, followed by a course of geometry for a whole year, and then another course of algebra. I don't know any other country that does that, and it's part of the problem," Boaler says.

Boaler is pioneering a different approach, centered on new techniques for teaching math. She focuses on data visualization, giving students a way to see how complex mathematical equations work in the real world. She's developing a website at [www.YouCubed.org](http://www.YouCubed.org) to disseminate these techniques to high school math teachers across the country. To date, the site has tallied 38 million visits.

The National Council of Teachers of Mathematics recently published *Catalyzing Change in High School Mathematics: Initiating Critical Conversations*<sup>5</sup>. This book shows educators ways to broaden the way they teach math to reach more of their students, and give them the math skills they will need in the workplace and in society.

Our report card shows that our current educational system needs improvement, and that we have to find ways to help more students achieve academic success. We should never stop exploring new ways to improve.

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<sup>3</sup> Freakonomics Radio Podcast, "America's Math Curriculum Doesn't Add Up," October 2, 2019, <http://freakonomics.com/podcast/math-curriculum/>

<sup>4</sup> LinkedIn 2018 Emerging Jobs Report, December 13, 2018, <https://economicgraph.linkedin.com/research/linkedin-2018-emerging-jobs-report>

<sup>5</sup> National Council of Teachers of Mathematics, <https://www.nctm.org/catalyzing/>

