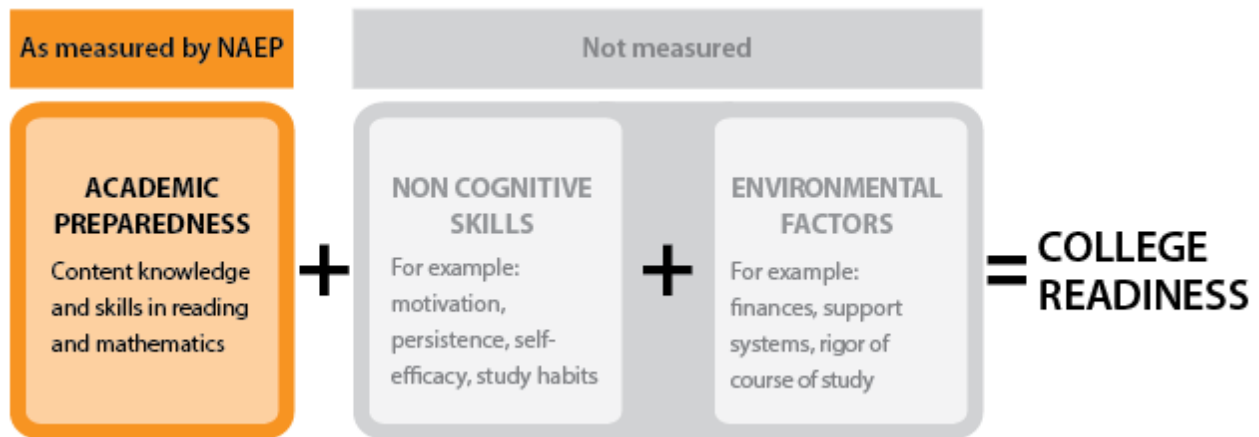


What is academic preparedness, and what are the provisional estimates?

On-going research conducted by the National Assessment Governing Board (NAGB) suggests that results from the twelfth-grade NAEP assessments in mathematics and reading may serve as an indicator of [students' academic preparedness for college](#). The research completed to date proposes that students scoring at or above 163 on the NAEP mathematics scale and at or above 302 on the reading scale are likely to possess the knowledge, skills, and abilities that would make them academically prepared for college. The estimated percentages of students reaching the preparedness benchmarks have a measure of uncertainty or margin of error associated with them; therefore, [confidence intervals](#) are used to determine the upper and lower bounds around each percentage.

Many factors relate to college readiness – one of them is academic preparedness.

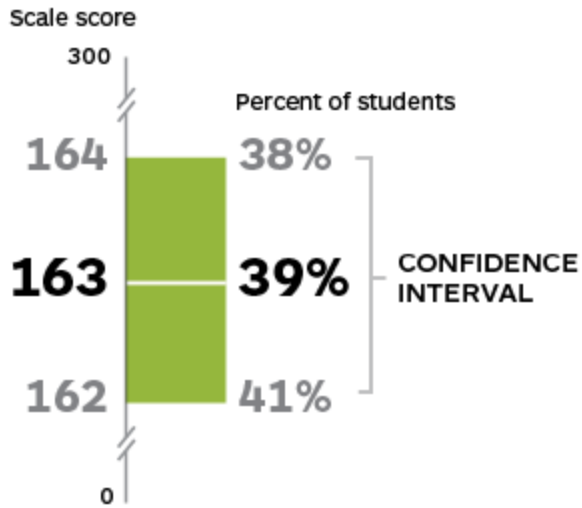


The NAGB preparedness research conducted thus far has focused on academic preparedness using measures external to the NAEP assessments, such as statistical links to the SAT, Workkeys, First Year GPA, and other measures. Although the NAEP grade 12 mathematics and reading frameworks were not originally designed to measure academic preparedness, the frameworks were modified for that purpose. The provisional estimates below are based on the first phase of a series of studies and therefore should be interpreted with caution.

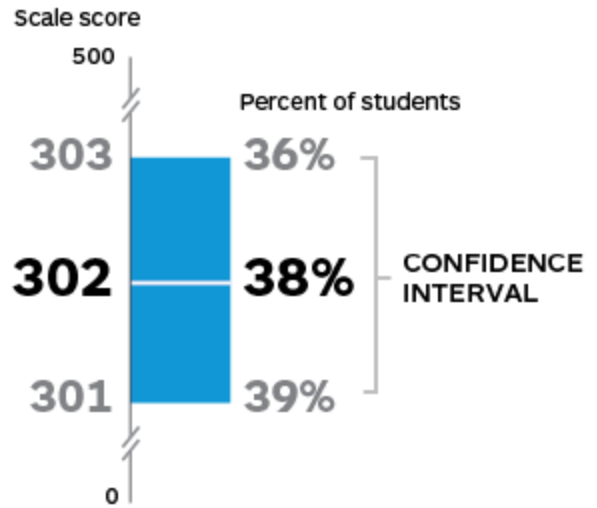
The estimated benchmark scores represent the point at which students are most likely to be prepared for college. Confidence intervals account for the margin of error regarding the proportion of students in the nation who are likely to be prepared for college (i.e., **would not need remediation**). As more research is conducted, including statistical linking studies with external preparedness measurements such as the ACT and the upcoming changes to the SAT, the estimate of the percentage of students who are academically prepared and the corresponding confidence interval would also be likely to change as well.

Percentage of students at or above the preparedness benchmark in twelfth-grade 2013 NAEP mathematics and reading:

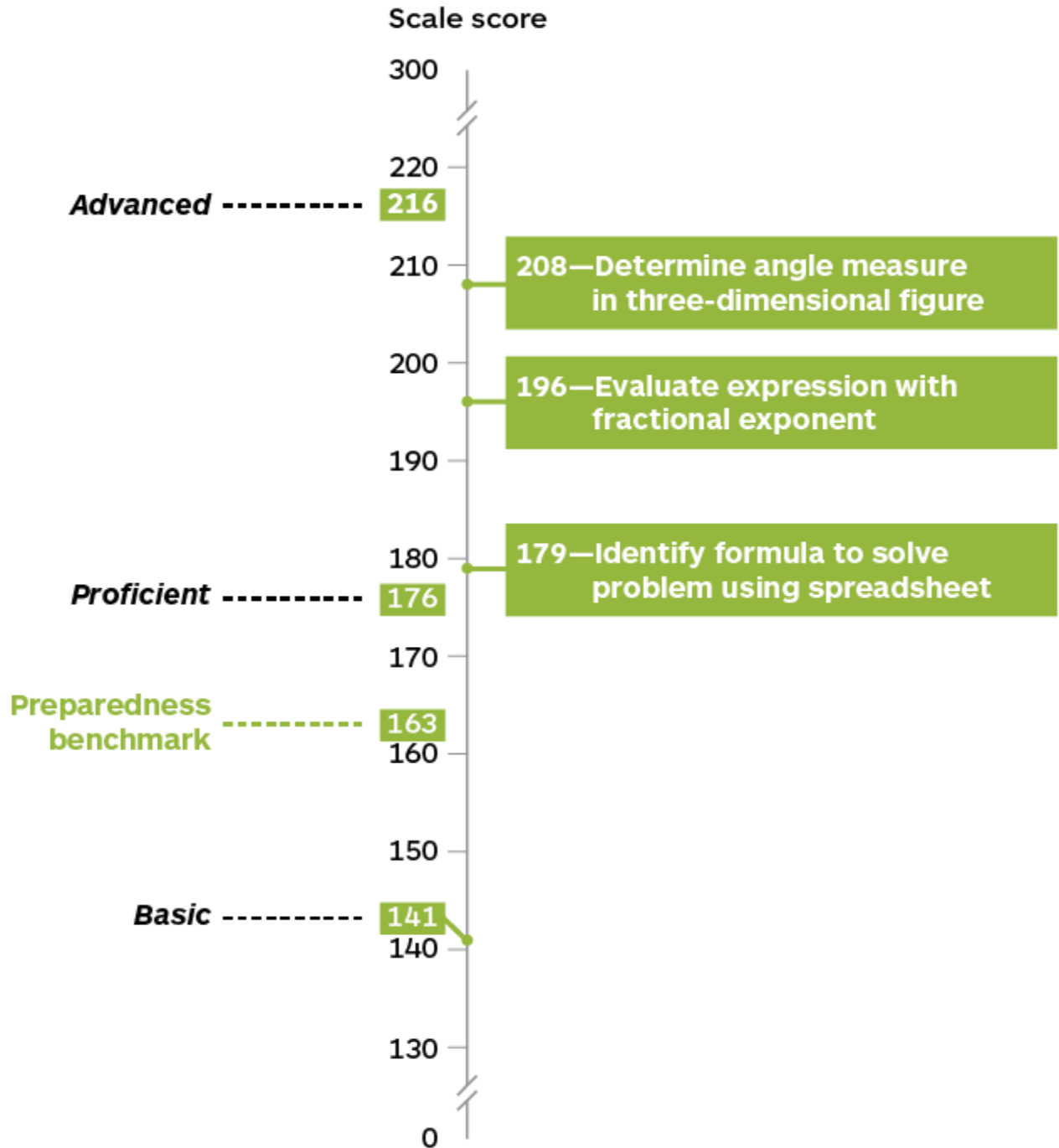
Mathematics



Reading



Mathematics Preparedness Cut Score



NOTE: In NAEP, the preparedness benchmark represents an estimated NAEP scale score for students who possess the knowledge, skills, and abilities that would make them academically prepared for college. The benchmark is 163 (on a scale of 0 to 300) in mathematics and 302 (on a scale of 0 to 500) in reading.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2013 Mathematics and Reading Assessments.

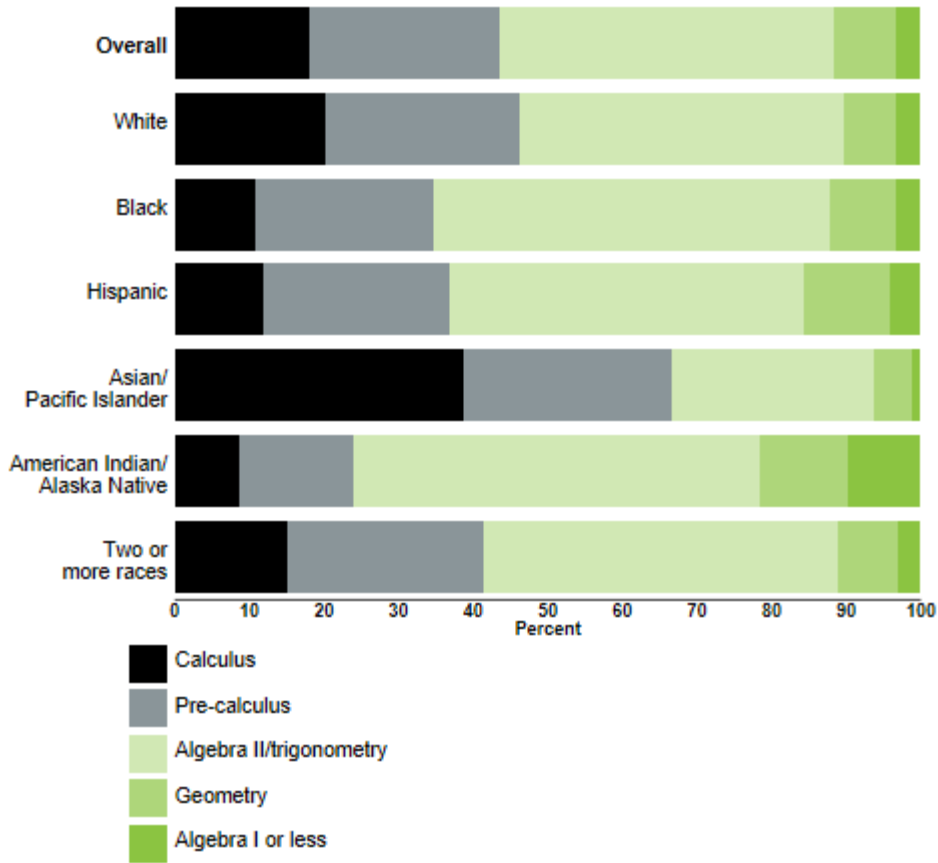
National Public Highest Level Mathematics Course

HIGHEST LEVEL MATHEMATICS COURSE – RACE/ETHNICITY ▼

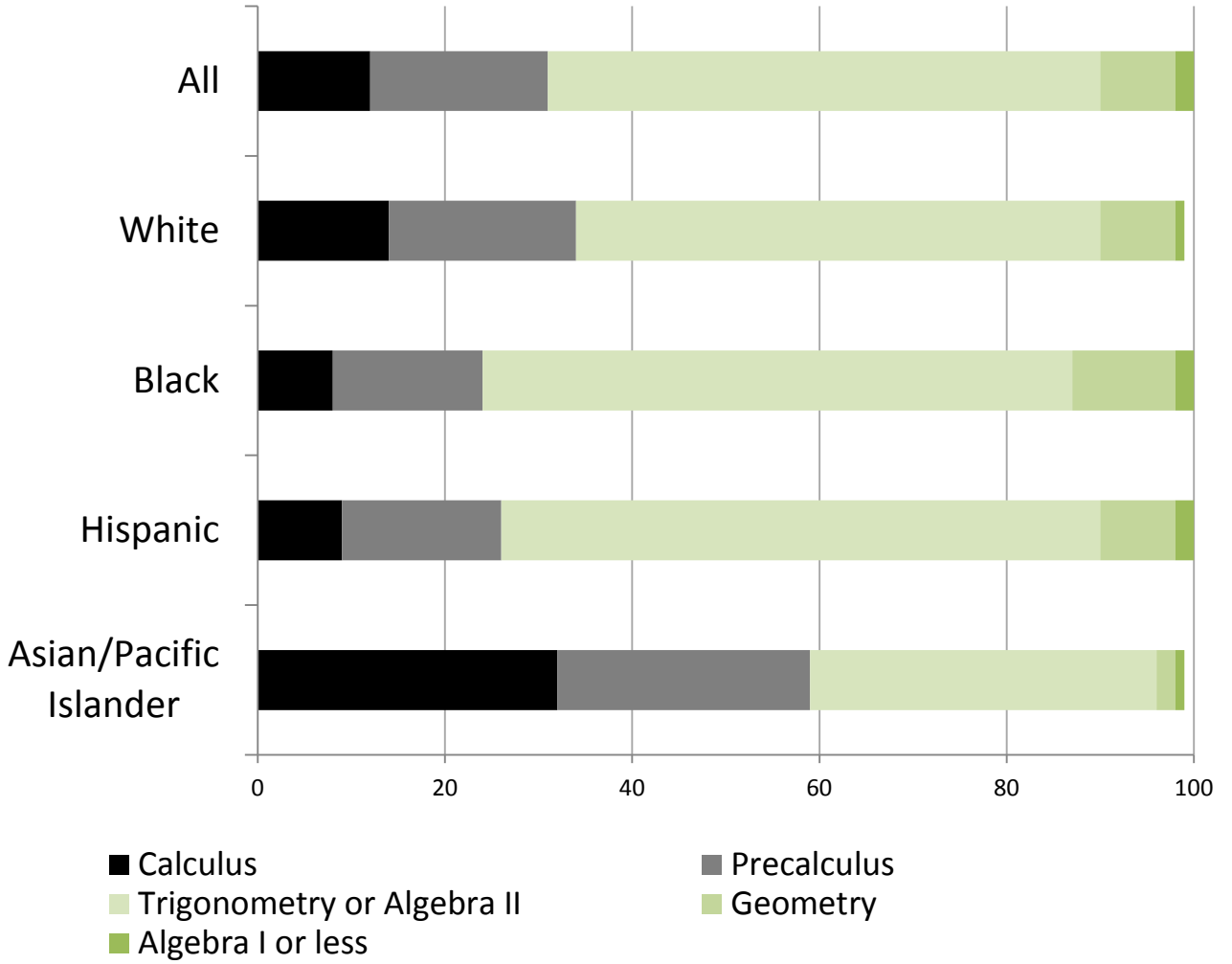
Percentage distribution of twelfth-grade students assessed in NAEP mathematics, by race/ethnicity and highest level of mathematics course taken: 2013

Click on each bar to see the percentages for each category

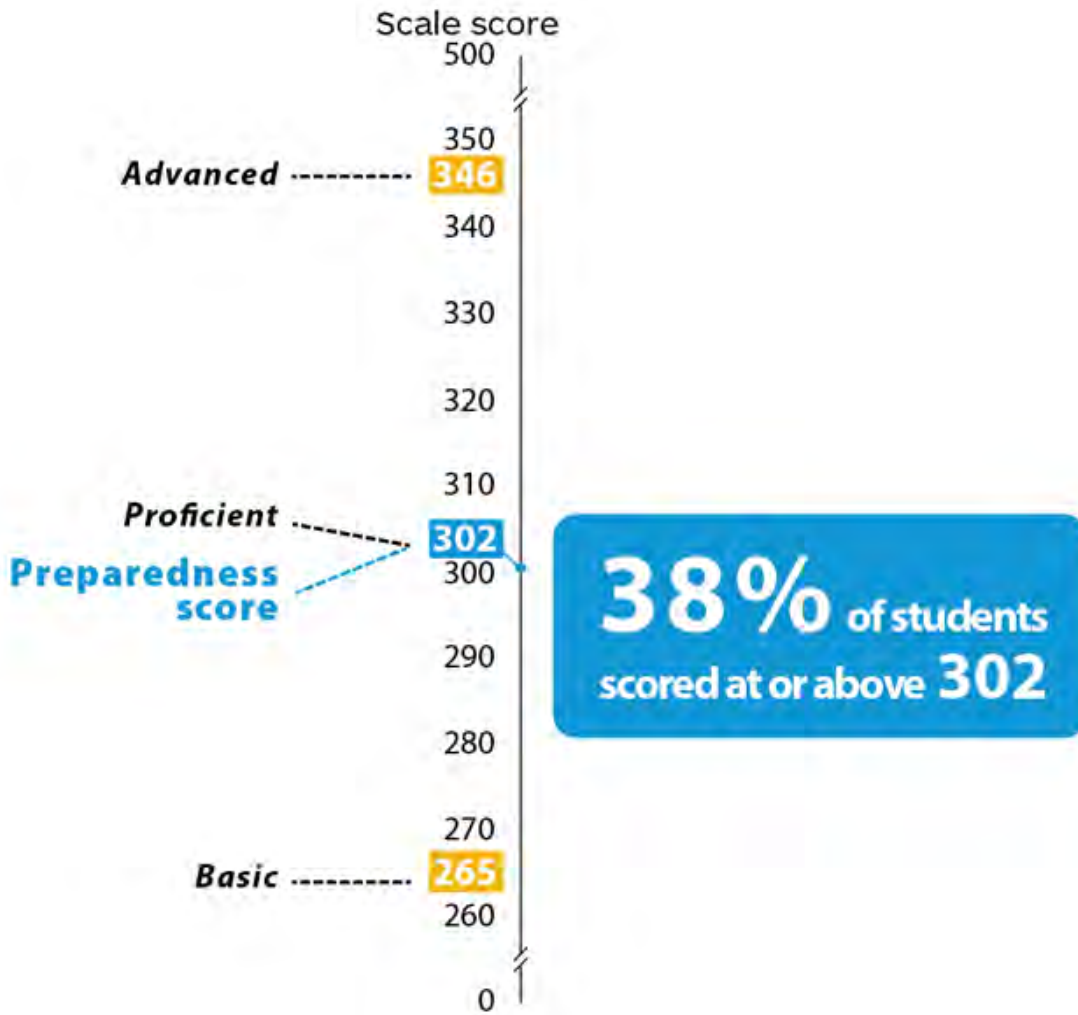
[View full questionnaire text](#)



Florida Highest Level Mathematics Course



Reading Preparedness Cut Score



Overview of the NAGB Academic Preparedness Research

Grade 12 is a critical transition point for American students. After graduates leave high school, they may enter college, training, or the workplace; but many find their next steps difficult, as indicated by high college remediation and dropout rates and high unemployment rates in this segment of the population.

A little over a decade ago, the National Assessment Governing Board (NAGB) established a commission to review and make suggestions about the utility of the grade 12 National Assessment of Educational Progress (NAEP) assessment; one such recommendation was to explore the use of the grade 12 assessment as an indicator of academic preparedness for post-secondary education. The interpretations of NAEP results for grade 12 in relation to academic preparedness for college are now being reported on a preliminary basis. They are intended to help the public achieve a better understanding about the NAEP scale scores and inform policy discussions about defining, measuring, validating and reporting on academic preparedness for college, both for NAEP and, more broadly, for related initiatives.

How is “academically prepared” defined?

For NAEP reporting, “academically prepared for college” refers to the reading and mathematics knowledge and skills needed for placement into entry-level, credit-bearing, non-remedial courses in broad access 4-year institutions and, for 2-year institutions, entry-level placement, without remediation, into degree-bearing programs designed to transfer to 4-year institutions.

This working definition is focused on the first year of college; it does not address college persistence beyond the first year or completion of a degree. The definition will necessarily apply in general across a broad range of programs and majors, but should not be applied specifically to any particular program or major.

Why “academic preparedness”?

Twelfth-grade is the major point of transition to higher education and training for employment, and information about the readiness of twelfth-graders for these destinations, though critically important, is scarce. A NAGB-appointed commission determined that NAEP – as the only source of nationally representative data on twelfth-grade student achievement – is uniquely positioned to provide it. Additionally, while a nationally representative sample of all high school seniors take the grade 12 NAEP assessment, not all high school seniors take traditional college entrance exams such as the SAT or ACT.

What is the meaning of “college readiness” and “academic preparedness”?

“College readiness” is broadly understood to include both academic preparedness and other characteristics needed for success in post-secondary education and training – characteristics that are not measured by NAEP. Other characteristics of readiness include non-cognitive factors (e.g., persistence, study habits) and environmental factors (e.g., rigor of high school course of study). NAEP is using the term academic preparedness in the same way that the SAT and other organizations define “college readiness,” which does not include the non-cognitive skills and environmental factors.

What inferences are *not* included in NAGB’s definition of “academic preparedness”?

The preparedness estimates are not intended to represent or be used as standards for minimal academic preparedness for college. They are intended solely to add meaning to interpretations of the twelfth grade NAEP reading and mathematics results in NAEP reports. Specifically, the NAGB academic-preparedness estimate is not intended to reflect

- the academic requirements for highly selective post-secondary institutions;
- the academic requirements for specific majors or pre-professional (e.g., medicine) programs;
or
- the academic requirements for entry into certificate or diploma programs for job training or professional development in post-secondary institutions.

Why should the research results be considered provisional and interpreted with caution?

There are several reasons why the research results should be considered provisional and interpreted with caution:

- College and universities use many indicators in their admission process other than admission test scores alone. Therefore, while the relationship between NAEP scores and the SAT (particularly, mathematics) is quite strong, the SAT score alone is not intended to be a comprehensive measure of college readiness.
- The NAEP grade 12 mathematics and reading frameworks were designed to provide a broad view of what grade 12 students know and can do in these subjects. They have been adjusted to include a preparedness focus. The NAEP assessments would require many additional measures and indicators to provide a reasonably complete view of readiness.

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- The statistical linking evidence for the academic preparedness measures is based on a single year of data (2009) and on external validation with instruments that have themselves changed over the years or will change in the near future to better reflect changing notions of what it means to be ready to go to college. Therefore, trends are not available because the preliminary benchmark on the NAEP scale determined in 2009 might be different in 1992, 2005, or 2015.

How long has NAGB been researching academic preparedness?

NAGB began this initiative in 2004 after receiving recommendations from its National Commission on NAEP Twelfth Grade Assessment and Reporting. To transform grade 12 NAEP into an indicator of academic preparedness, the Governing Board took several steps including reviewing and revising the NAEP twelfth grade reading and mathematics assessment frameworks in 2005 to report on preparedness, assembling a technical panel of experts to advise on the research, and contracting for the research studies in 2008. More than 30 studies were completed between 2009 and 2012.

A second phase of NAEP preparedness research began in 2013. The results of this research will be examined to determine the extent to which they confirm existing results, support inferences about academic preparedness for college at the state level, and support academic preparedness for job training. This will likely result in refinements to the NAEP estimates and the corresponding estimate ranges.

Why is academic preparedness only reported at the national level for the 2013 results?

The NAEP provisional academic preparedness estimates are based on over 38 studies. However, the principle linking study was based on the SAT and therefore inherits some limitations of the SAT. Currently, the SAT accurately predicts the preparedness percentages of higher performing students and White students, with less accurate predictions for lower performing students, Black students, and Hispanic students. As a result, preparedness estimates for the 2013 assessments are reported exclusively at the national level. Additional research is needed to report preparedness estimates at the state level and for subgroups, including race/ethnicity and socioeconomic status.

How was the research conducted?

The figure below represents a model of the research program, with five types of research displayed, the interrelationships that would be examined, and the potential meaning of the research results in terms of the NAEP score scale.

Study Interrelationships



What are the initial findings from the NAGB research?

To date, the NAGB research found the following:

- A high degree of overlap in the knowledge and skills measured by NAEP reading and mathematics at twelfth grade and by tests widely used for college admission and placement;
- A close relationship between the performance of a nationally representative sample of students who took both NAEP and the SAT; and
- Consistent results across studies and across years that examined performance on NAEP in relation to
 - college-readiness benchmarks for reading and mathematics established for the SAT and ACT, and
 - college outcomes, such as first-year grade point average and whether students were placed into remedial or regular credit-bearing first-year college courses.

The complete research reports and the validity argument can be found at <http://www.nagb.org/what-we-do/preparedness-research.html>.