

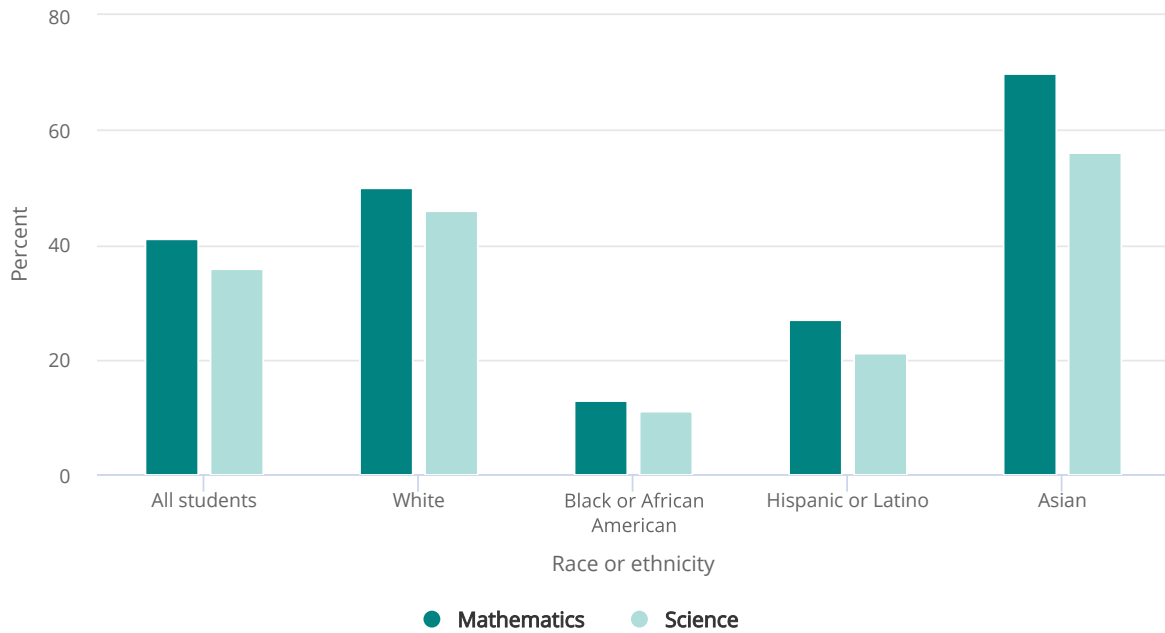


Measuring College Readiness in Mathematics and Science

The ACT is a national college admissions examination that consists of subject-area tests in English, mathematics, reading, and science. In 2016, 64% of the high school graduating class took the ACT (ACT 2016). The ACT organization has established College Readiness Benchmarks, which are the minimum scores students need to have a high probability of success in the credit-bearing college courses most commonly taken by first-year college students.* ACT drew on college performance data from 214 institutions and 230,000 students to establish its benchmarks. Although not representative of the entire high school population, performance on these benchmarks gives insight into how well prepared a majority of the nation's students are to succeed in college-level mathematics and science. In 2016, ACT reported that 41% of ACT takers met the college readiness benchmark in mathematics, and 36% met the college readiness benchmark in science (Figure 1-A). These percentages varied substantially by race or ethnicity, with 70% of Asian ACT takers meeting the mathematics benchmark, compared with 50% of white students, 27% of Hispanic students, and 13% of black students. Similar disparities were seen in the percentages of students meeting the science benchmark, with 56% of Asian students meeting the benchmark, compared with 46% of white students, 21% of Hispanic students, and 11% of black students.

FIGURE 1-A

ACT-tested 2016 high school graduates meeting ACT college readiness benchmarks in mathematics and science



Source(s)

ACT, 2016. *The Condition of College and Career Readiness 2016*. Iowa City, IA, https://www.act.org/content/dam/act/unsecured/documents/CCCR_National_2016.pdf. Accessed 27 February 2017.

Science and Engineering Indicators 2018

Other measures of college readiness support the ACT findings. National Association of Educational Progress (NAEP) college-ready indicators provide readiness estimates based on a nationally representative sample of students. The National Assessment Governing Board (NAGB), which sets policy for NAEP, began using NAEP in 2013 to estimate the percentage of grade 12 students who possess the knowledge and skills in reading and mathematics that would make them academically prepared for first-year college coursework. NAGB conducted a decade of research to determine the NAEP scores students need to earn to demonstrate college readiness. According to results from the 2015 NAEP, an estimated 37% of twelfth graders were prepared for college-level coursework in mathematics (Kena et al. 2016), a finding similar to that of ACT and one that is echoed in Achieve Inc.'s 50-state analysis of student performance on college readiness indicators. Achieve found that, even in the highest performing state, only 42% of students were ready for college-level work in mathematics (Achieve Inc. 2016).

* Students who meet the mathematics or science benchmark on the ACT have approximately a 75% chance of earning a C or better in the credit-bearing college-level mathematics or science courses most commonly taken by college students (e.g., college algebra and biology).