



NEWS RELEASE

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Contact: Stephaan Harris, (202) 357-7504, Stephaan.Harris@ed.gov

Science Scores on The Nation’s Report Card Decline in Grade 4, Show No Change in Grades 8 and 12 Since 2015

*Score gaps between higher- and lower-performing students widen in grades 4 and 8;
close between male and female eighth graders*

WASHINGTON – Average science scores for the nation’s fourth-grade students declined by two points compared to 2015, while average scores did not change significantly among students in grades 8 and 12, according to 2019 National Assessment of Educational Progress (NAEP) Science results released today.

The latest results show score gaps have widened between higher- and lower-performing students in grades 4 and 8, with the changes driven by declines among lower-performing students. A similar trend has been observed across NAEP subject areas and grade levels in recent years, including in mathematics and reading at grades 4 and 8.

At the same time, when compared to 2009, NAEP science scores show some progress overall and among certain student groups. Average NAEP science scores for fourth- and eighth-grade students have risen by one point and four points, respectively, since 2009. In grade 8, the score gap between White and Black students has narrowed and the gap between male and female students has closed.

“While we’ve seen encouraging progress in science results over the last decade, the latest scores suggest progress has stalled since the last assessment,” said Gov. Haley Barbour, chair of the National Assessment Governing Board, which sets policy for NAEP. “The COVID-19 pandemic has shown just how important it is to understand the science in our lives. Science knowledge will be key to the growth of our economy and workforce, especially in STEM, so we need to improve learning in this subject.”

The latest NAEP science assessment was administered from January to March 2019, well before the pandemic. The assessment covers three content areas: Physical Science, Life Science, and Earth and Space Sciences. Scores declined since 2015 among grade 4 students in two of three science content areas (by four points in Life Science and by two points in Earth and Space Sciences). There were no significant changes in content area scores for students in grades 8 and 12 compared to 2015.

Results for NAEP are reported in several ways, including as percentages of students performing at or above three NAEP achievement levels (*NAEP Basic*, *NAEP Proficient*, and *NAEP Advanced*). Students performing at or above *NAEP Proficient* demonstrate solid academic performance and competency over challenging subject matter. The percentage of students performing at or above *NAEP Proficient* declined in grade 4, while there were no significant changes in grades 8 and 12 compared to 2015. Slightly more than one-third of students in grade 4 (36%) and grade 8 (35%) scored at or above *NAEP Proficient* in 2019, while roughly one-fifth (22%) of grade 12 students did so.

Gaps Widen Between Higher- and Lower-Performing Students

NAEP also reports scores by lower- (10th and 25th percentiles), middle- (50th percentile), and higher-performing students (75th and 90th percentiles). In grade 4, scores for lower- and middle-performing

students declined compared to 2015, while scores for higher-performing students remained flat. In grade 8, scores declined among students in the 10th percentile and did not change for students in other percentiles. There were no significant changes among performance percentiles in grade 12.

"Across NAEP subjects, whether these science results or the results for reading, math, and U.S. history, there is a consistent and disturbing trend – the lowest-performing students are falling further behind," said Alberto M. Carvalho, member of the Governing Board and superintendent of Miami-Dade County Public Schools. "This glaring inequity deserves not only our attention, but also decisive action."

Science scores also declined in grade 4 for many student groups compared to 2015. Among fourth-grade students, science scores declined for male, female, White, and Black student groups, compared to 2015. Scores did not change significantly for Hispanic and Asian/Pacific Islander students.

At the same time, the latest score results show encouraging progress in addressing performance gaps between some student groups in grade 8. Compared to 2009, the score gap between White and Black eighth-grade students has narrowed by four points, while the score gap between White and Hispanic students has narrowed by six points. Similarly, the score gap between male and female eighth-grade students has closed from a four-point gap in 2009. Closure was driven by Black and Hispanic students improving at a faster rate than White students, and girls improving at a faster rate than boys.

Insights into Students' Interest in Science Careers

In addition to results, surveys administered to educators and students as part of the science assessment provide important contextual information and insights on students' course-taking, experiences with scientific inquiry, and interest in pursuing a career in science. Seventy-one percent of grade 12 students in 2019 reported having taken no Advanced Placement (AP) science courses. These students had a lower NAEP science score on average than students who reported having taken one or more AP courses. Forty-six percent of grade 12 students reported that they were *somewhat likely*, *quite likely*, or *extremely likely* to pursue a career in science. A larger percentage of female students (51 percent) than male students (42 percent) reported that they were somewhat or more likely to pursue a science career.

About 90,000 students across the country in almost 4,000 schools participated in the 2019 NAEP Science assessment: 30,400 fourth-graders; 31,400 eighth-graders; and 26,400 twelfth-graders. Results are for the nation only. State-level results are not available.

Also known as The Nation's Report Card, NAEP is the country's only ongoing, nationally representative assessment of education. It provides objective, independent data about the progress of American education in a variety of subjects and grade levels as well as insights into the contexts in which students learn and educators work.

For full results from the 2019 NAEP Science assessment, visit www.nationsreportcard.gov/science.

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The National Assessment Governing Board is an independent, nonpartisan board whose members include governors, state legislators, local and state school officials, educators, business representatives, and members of the general public. Congress created the 26-member Governing Board in 1988 to set policy for the National Assessment of Educational Progress. For more information, visit www.nagb.gov.