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CONTACT:**DAN McGRATH, Daniel.McGrath@ed.gov, (202) 245-7548 OR
EMILY MARTIN, EMartin@hagersharp.com, (202) 842-3600

Eighth-grade girls continue to outscore boys on Technology and Engineering Literacy assessment from The Nation’s Report Card; overall scores improve

*More eighth-graders take technology and engineering classes*

WASHINGTON (April 30, 2019)—Average scores for U.S. eighth-graders increased between 2014 and 2018 on an innovative assessment designed to measure their ability to apply knowledge of technology and engineering principles to solve real-world problems, according to the newest results from the National Assessment of Educational Progress (NAEP), also known as [The Nation’s Report Card](http://www.nationsreportcard.gov/tel_2018/), released today by the National Center for Education Statistics (NCES).

Average scores increased by two points on the Technology and Engineering Literacy (TEL) assessment from the first time it was administered in 2014. Girls continued to outperform boys on the assessment, and while girls scored higher in 2018 than 2014, boys’ scores were unchanged.

“It’s encouraging to see girls continue to perform so well on analyzing and solving real world technological problems,” said Peggy G. Carr, the associate commissioner for assessments at NCES. “These results suggest that girls have the foundational abilities to be successful in STEM careers. It is encouraging that more women are now majoring in STEM disciplines; yet, they remain underrepresented in STEM careers. It is in the national interest to do more to encourage talented young women to pursue careers in STEM.”

The increase in average scores for all students was driven by improvements for middle- and higher-performing students. Their scores increased by three to four points while the performance of lower-performing students remained flat.

“This increase in the average and higher-performing student scores while the nation’s lower-performing students stagnate is a pattern similar to one we saw in the NAEP 2017 mathematics and reading results, as well as in other assessments,” said NCES Commissioner Lynn Woodworth. “Finding consistent patterns of differing growth across several subjects warrants additional investigation by the instructional and research communities.”

The TEL assessment provides new insights into how students use their understanding of technology and engineering to interact, interpret, and influence the world in which they live. As part of the assessment, students used computers to complete scenario-based tasks that measure their ability to analyze and solve real-world technology and engineering problems. The assessment framework defines “technology” as any modification of the natural world done to fulfill human needs or desires, while engineering refers to a systematic and continual approach to designing objects, processes, and systems to meet human needs and desires.

More than 15,000 eighth-grade students in approximately 600 public and private schools completed the TEL assessment in 2018. Performance is reported as scale scores and as achievement levels. Average scores rose from 150 to 152. In 2018, the average score for girls was 155, higher than the average score for boys of 150. Average scores increased for White, Black, and Asian American students between 2014 and 2018, while there was no significant change in the average score for Hispanic students. (The assessment results are reported on a 0-300 scale.)

The assessment also evaluates students’ thinking and reasoning skills in three content areas (Technology and Society, Design and Systems, and Information and Communication Technology) and three practices (Understanding Technological Principles, Developing Solutions and Achieving Goals, and Communicating and Collaborating). In 2018, girls scored significantly higher than boys in all the practice areas and in two of the three content areas. There was no significant difference between girls and boys in the Design and Systems content area.

Results on the assessment are also reported as percentages of students who reach each of the three NAEP achievement levels: *NAEP* Basic, *NAEP* Proficient, and *NAEP* Advanced. NAEP achievement levels are provisional and therefore should be interpreted with care to ensure a proper understanding of performance.

Between 2014 and 2018, the percentage of students scoring at or above *NAEP Basic* on TEL remained unchanged; and higher percentages of students scored at or above *NAEP Proficient* and *NAEP Advanced* in 2018. In 2018, 46 percent of students scored at or above *NAEP Proficient* andfive percent of students scored at or above *NAEP Advanced,* compared to 43 and three percent, respectively, in 2014. (NAEP achievement levels are set by the National Assessment Governing Board.)

Since students’ opportunities to learn about and use technology and engineering happen both in and out of the classroom, the assessment included a survey asking about these experiences. A higher percentage of students reported taking at least one course related to technology or engineering in 2018 compared to 2014. Fifty-seven percent of eighth-graders reported taking at least one class related to technology or engineering in 2018, an increase of five percentage points compared to 2014.

The National Assessment of Educational Progress (NAEP)—also known as The Nation's Report Card—is the largest nationally representative​ and continuing assessment of what students in the United States know and can do in various subject areas. NAEP is administered by the National Center for Education Statistics (NCES). It is considered the ‘gold standard’ of student assessments.

Visit <http://www.nationsreportcard.gov/tel_2018/> to view the report.

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*The National Assessment of Educational Progress (NAEP) is a congressionally authorized project sponsored by the U.S. Department of Education. The National Center for Education Statistics, within the Institute of Education Sciences, administers NAEP. The Commissioner of the National Center for Education Statistics is responsible by law for carrying out the NAEP project.*

*The National Center for Education Statistics, a principal agency of the U.S. Federal Statistical System, is the statistical center of the U.S. Department of Education and the primary federal entity for collecting and analyzing data related to education in the U.S. and other nations. NCES fulfills a Congressional mandate to collect, collate, analyze, and report complete statistics on the condition of American education; conduct and publish reports; and review and report on education activities internationally.*

*The National Assessment Governing Board is an independent, bipartisan 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 NAEP.*