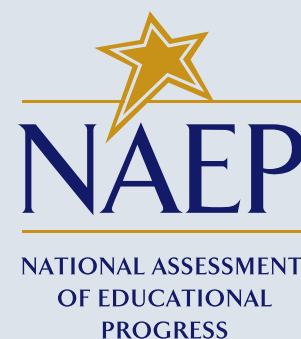


Technology and Engineering Literacy Assessment



What is NAEP?

NAEP is an essential measurement of student achievement in the United States.

- ▶ NAEP is considered the gold standard of large-scale assessments because of its high technical quality. From development to reporting results, NAEP represents the best thinking of assessment and content specialists, state education staff, and teachers from around the nation.
- ▶ NAEP is a congressionally mandated project administered by the National Center for Education Statistics, within the U.S. Department of Education's Institute of Education Sciences.
- ▶ NAEP serves a different role than state assessments. While states have their own unique assessments with different content standards, the same NAEP assessment is administered in every state, providing a common measure of student achievement.
- ▶ Depending on the type of NAEP assessment that is administered, the data can be used to compare and understand the performance of demographic groups within your state, the nation, other states, and districts that participate in the Trial Urban District Assessment. NAEP is not designed to collect or report results for individual students, classrooms, or schools.
- ▶ The results of NAEP are released as The Nation's Report Card and are used by policymakers, educators, and researchers to develop ways to improve and report on education.



The technology and engineering literacy (TEL) assessment is one of the latest measurements of student achievement from the National Assessment of Educational Progress (NAEP). In 2014, the first-ever TEL assessment was administered to 21,500 eighth-grade students in about 840 schools across the nation and will be administered again in 2018 to approximately 16,000 eighth-grade students nationwide. The assessment is completely digitally based, administered on laptops, and includes interactive, multimedia scenario-based tasks—an innovative component of NAEP.

For generations, students have been taught about technology and have been instructed on how to use various technological devices. However, until the development of the TEL assessment, there had been no standardized, nationally representative assessment to provide evidence of what students know about technology and engineering; the role technology and engineering plays in our lives; and the extent to which students can use technologies and understand how engineers design and develop them.

What is TEL?

The 2014 NAEP TEL framework broadly defines technology and engineering literacy as the capacity to use, understand, and evaluate technology, as well as to understand technological principles and strategies needed to develop solutions and achieve goals. The framework guides the development of the TEL assessment and defines what students should know and be able to do with technology. The assessment is designed to measure students' knowledge and skills in three interconnected areas:

- ▶ Technology and Society
- ▶ Design and Systems
- ▶ Information and Communication Technology



For more information about NAEP, visit:
<http://nces.ed.gov/nationsreportcard>

The framework focuses on the level of knowledge and competencies about technology and engineering needed by all students and citizens to function in a technological society.

Why is TEL important for today's students? The skills for technology and engineering literacy are increasingly taught through a wide range of school coursework. This includes contemporary science, technology, engineering, and mathematics (STEM) education, as well as subjects such as social studies and language arts. These courses include instruction on the use of computers and information technology to complete school assignments, lessons that examine the role of technology in society, and information on engineering design. Information technologies are also essential tools in the workplace and in everyday living.

Because of this growing importance of technology and engineering in the educational landscape, an assessment of technology and engineering literacy is an important addition to NAEP. The TEL assessment measures what students know about technology and engineering in the same way that NAEP assesses their knowledge and capabilities in mathematics, reading, science, and other subjects.

How is TEL assessed? To allow students to demonstrate the wide range of knowledge and skills detailed in the three TEL assessment areas (technology and society; design and systems; information and communication technology), they are asked to perform a variety of problem-solving tasks based on interactive scenarios reflecting realistic solutions. These scenario-based tasks are an innovative component of NAEP. In addition to scenario-based tasks, TEL also relies on short-answer and multiple-choice questions to measure students' knowledge and skills.

Because students' experiences with technology and engineering are not always attained in or confined to the classroom, the TEL assessment is accompanied by a survey questionnaire focusing on students' opportunities to learn about technology and engineering both inside and outside the classroom.

What should schools expect? The TEL assessment is administered by NAEP representatives who work with school staff to organize the assessment activities. NAEP representatives bring all necessary materials to the school on assessment day, including laptop computers and earbuds. Schools only need to provide space for students to take the assessment, desks or tables, and an adequate number of electrical outlets in the assessment location; schools do not need to provide internet access. About 30 students in each school are selected to participate, and the assessment is administered in two sequential sessions of approximately 15 students each.

What should students expect? Before the assessment begins, students watch a tutorial to familiarize themselves with the interface and understand how to use the program. It takes approximately 120 minutes for students to complete the assessment, including transition time, directions, and completion of a short survey questionnaire.

To learn more about TEL:

- ▶ Watch the *Introduction to the TEL Assessment* video: <https://nces.ed.gov/nationsreportcard/videos/telanimation>
- ▶ View results from the 2014 TEL assessment and try out sample tasks: https://www.nationsreportcard.gov/tel_2014/
- ▶ Access additional resources: <https://nces.ed.gov/nationsreportcard/tel>



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