



## About the NAEP Technology and Engineering Literacy Assessment

The National Assessment Governing Board (NAGB) is an independent, bipartisan organization that oversees the National Assessment of Educational Progress (NAEP). Because of the growing importance of technology and engineering in the educational landscape, and to support America's ability to contribute to and compete in a global economy, NAGB set out in 2008 to develop a framework for a national assessment of students' knowledge and skills in technology and engineering (NAGB 2013). NAGB solicited input for the framework from technology and engineering experts, business leaders, educational policymakers, teachers, parents, and the public via regional forums, webinars, and committee meetings to draft and refine the NAEP technology and engineering literacy (TEL) framework. The framework describes the specific knowledge and skills to be assessed and how the assessment questions should be designed and scored. In the framework, technology is defined as "any modification of the natural world done to fulfill human needs or desires" and engineering is "a systematic and often iterative approach to designing objects, processes, and systems to meet human needs and wants" (NAGB 2013:xi). The framework defines technological 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" (NAGB 2013:xi).

The first completely computer-based NAEP assessment, TEL includes interactive scenario-based tasks in addition to more traditional short-answer and multiple-choice questions.\* Using videos and interactive graphics, scenario-based tasks ask students to demonstrate their knowledge and skills to solve problems within realistic situations. For example, one task requires students to develop an online exhibit on water pollution, whereas other tasks require students to design a safe bike lane or create an ideal iguana habitat. Each scenario includes several questions and takes between 10 and 30 minutes to complete. These scenario-based tasks are designed to measure three major interconnected content areas—Technology and Society, Design and Systems, and Information and Communication Technology—and three practices that cut across the content areas—Understanding Technological Principles, Developing Solutions and Achieving Goals, and Communicating and Collaborating. Some tasks measure students' abilities in one content area and practice, and other tasks measure more than one content area or practice.

TEL was piloted in 2013 and administered to 21,500 students in approximately 840 public and private schools around the country in 2014. The National Center for Education Statistics, which administers NAEP, brought its own Internet service and laptop computers into schools to avoid any technical difficulties associated with administering computer-based assessments in classrooms. Before the assessment began, students viewed a tutorial that helped them become familiar with the computer interface and how to use the assessment program.

\* All NAEP exams were digitally administered as of 2017.