

Focus on NAEP

National Assessment of Educational Progress

Sampling

Focus on NAEP is a publication series developed to highlight findings and summarize information about the ongoing development and implementation of the National Assessment of Educational Progress (NAEP). This issue details how samples of schools and students are selected for the NAEP assessments.



National

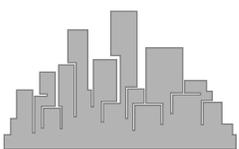
National samples include both public and non-public schools. For national-only NAEP assessments (e.g., Long-Term Trend), sampling begins with primary sampling units (PSUs) from the U.S. Census Bureau, which are a merging of the nation's 3,000 counties. PSUs are categorized based on geographical (e.g., census region and locale) and demographic factors (e.g., income level).

Ten percent of these PSUs are selected using probability proportional to sample size, meaning that larger PSUs have a greater likelihood of selection, resulting in a sample of 95 to 100 PSUs. Sampling in certain NAEP assessments (i.e., reading and mathematics) has expanded to allow for state-level analysis. In these assessments public school data for the national sample is composed of the sum of the state samples.



State

In the 1990s, the NAEP program expanded the assessment to the 50 states, the District of Columbia, and the Department of Defense Education Activity (DoDEA). State samples include only public schools. In a NAEP state assessment year the entire state is treated as a sampling unit.



TUDA Districts

In 2002, the first NAEP Trial Urban District Assessment (TUDA) was conducted in six large urban districts. Currently there are 21 TUDA districts. Larger TUDA districts have somewhat larger sample sizes than others. All data collection for TUDA districts contributes to state results.

NAEP Representative Samples

NAEP is designed to report results at the national and state level, as well as for selected urban districts, without requiring every student in every school to take the assessment. This is accomplished by creating a sampling frame using the Common Core of Data (CCD) and the Private School Survey (PSS). NAEP is then administered to a sample of students from this frame who represent the student population of the nation as a whole and of individual states and districts participating in the Trial Urban District Assessment (TUDA).

School Selection

1 Identify schools

Schools are identified based on the U.S. Department of Education's public school system database. Because national-level data on schools can be up to three years old, school data is verified with state departments of education. A national sample of nonpublic (private) schools is also selected for grades 4, 8, and 12.

2 Classify schools

Schools are classified into groups by type of location (city, suburb, town, or rural) and then by racial/ethnic composition. These groups are called strata.

3 Arrange schools

Schools are sorted by a student achievement measure (e.g., school-level results on state achievement tests) to ensure NAEP represents all levels of school performance.

4 List schools

The school groupings are then placed into a comprehensive ordered list. The specific schools that comprise the sample are ordered based on location type, race/ethnicity, and student achievement.

5 Select schools

NCES draws a separate sample of schools from each stratum with probability proportional to school size. Small schools, high minority schools, and private schools are sampled to ensure that they are adequately represented.

If the school participation rate in the sample is below 85 percent, the results cannot be reported.

6 Confirm schools

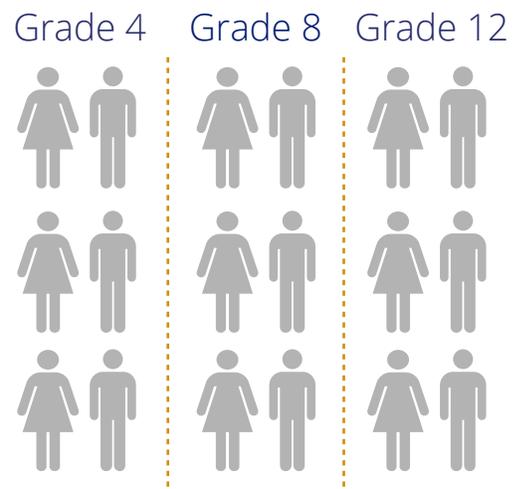
A list of selected schools is sent to each state department of education to confirm eligibility. School closure or no eligible students would prevent a school from being selected.

Student Selection

Once a school has been selected for either a state or national assessment, students within the school are selected for each subject area based on grade (4, 8, or 12). From this list, a sample of students is randomly selected by NCES to participate in the assessment. Every student in a sampled school is eligible to be selected.

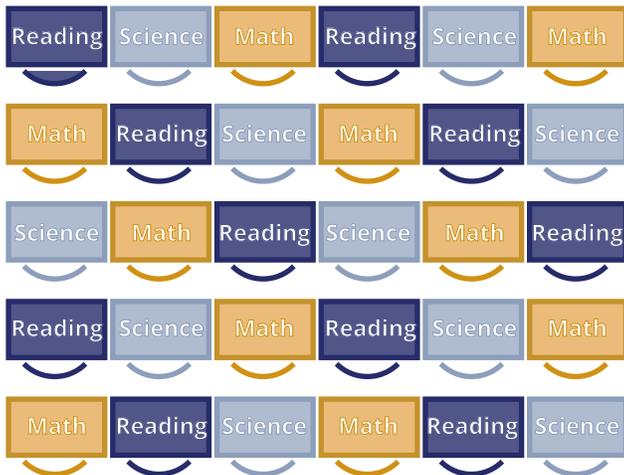
After the sample is drawn, students are assigned to a single subject area in which to answer questions. In general, 30 students are selected per grade per subject from each school. Typically, 95 percent of fourth- and eighth-grade students and 85 percent of twelfth-grade students selected agree to participate.

Students with disabilities and English language learners are eligible to receive accommodations offered by the NAEP program.



Subject Selection

This diagram shows the typical distribution of NAEP test booklets in a classroom of 30 students during an assessment of mathematics, reading, and science. Students sitting next to each other do not take the same subject. For each subject, there are several different versions of booklets.



Item Selection

Individual students only complete a subset of NAEP items. A technique called Balanced Incomplete Block (BIB) spiraling is used in which groups of items are systematically arranged with other groups of items within test booklets to assure that the entire content domain for the subject is covered. And all items are completed by a representative sample of students, though individual students only complete a fraction of the items.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2013 Mathematics and Reading Assessments.

Betsy DeVos
Secretary
U.S. Department of Education

Thomas Brock
Commissioner, National Center for Education Research
Delegated the Duties of IES Director

Peggy G. Carr
Acting Commissioner
National Center for Education Statistics

The National Center for Education Statistics (NCES), located within the U.S. Department of Education and the Institute of Education Sciences, is the primary federal entity for collecting and analyzing data related to education.

The National Assessment of Educational Progress (NAEP) is a congressionally mandated project sponsored by the U.S. Department of Education and administered by NCES. The Commissioner of Education Statistics is responsible by law for carrying out the NAEP project. The National Assessment Governing Board is responsible for setting policy for NAEP, including the NAEP achievement levels.

Prepared for the National Center for Education Statistics under Contract No. ED-IES-12-D-0002 with the American Institutes for Research.

National Center for Education Statistics
Institute of Education Sciences
U.S. Department of Education
550 12th Street, SW
Washington, DC 20202

Authors
Emmanuel Sikali
National Center for Education Statistics
(202) 245-7814
Emmanuel.Sikali@ed.gov

Cadelle Hemphill
Tiffany Decker
American Institutes for Research

