General Information About the

NAEP 2022 ASSESSMENTS

Details About the NAEP Program and Test Questions

Grade 4

Mathematics  Reading
National Assessment of Educational Progress
2022 Grade 4—Mathematics and Reading

I. Letter From Peggy G. Carr, PhD, Commissioner, NCES ........................................ 3
II. The NAEP Assessments .......................................................................................... 5
   Mathematics .............................................................................................................. 6
   Directions .................................................................................................................. 7
   Sample Questions ..................................................................................................... 8
   Reading ...................................................................................................................... 9
   Directions .................................................................................................................. 10
   Sample Questions ..................................................................................................... 11
III. NAEP 2022 Survey Questionnaires ....................................................................... 12
IV. NAEP Questions Tool ............................................................................................. 13
V. About NAEP ............................................................................................................ 14
Letter From Peggy G. Carr, PhD, Commissioner, NCES

As Commissioner of the National Center for Education Statistics (NCES), and on behalf of the National Assessment of Educational Progress (NAEP), I want to thank you for your participation in the NAEP 2022 assessments. The NAEP program is an essential measure of student achievement in the United States. NAEP results provide valuable information on what students in our country know and can do in various subjects.

NCES is keenly aware of the enormous challenges that our nation’s schools are facing due to the COVID-19 pandemic and the flexible approaches needed to assess students during this time. Our top priority is to protect the health and safety of students and school staff. NCES continues to monitor COVID-19 developments and will work closely with our state and district partners to determine how best to assess students in schools. As the situation with COVID-19 continues, NAEP will adapt to new processes and procedures. Visit https://nces.ed.gov/nationsreportcard/about/covid19.aspx for more information about NAEP COVID-19 protocols and updated NAEP administration plans for 2022.

In 2022, a representative sample of fourth- and eighth-grade students will take the NAEP mathematics and reading assessments on sanitized NAEP-provided tablets, and some eighth-grade students will take the civics and U.S. history assessments.

At the end of each NAEP assessment, students voluntarily complete brief survey questionnaires that provide valuable information about their educational experiences and opportunities to learn both in and outside of the classroom, as well as how they have accessed learning during the COVID-19 pandemic. To learn more about the NAEP survey questionnaires, see page 12 of this document or visit https://nces.ed.gov/nationsreportcard/experience/survey_questionnaires.aspx.

Results of the 2022 mathematics and reading assessments will be reported as The Nation’s Report Card, and results will be released at the national and state levels; civics and U.S. history results will be released at the national level only. Assessment results are widely discussed in the press and are used by educators, researchers, policymakers, and elected officials to make decisions about education policy and funding.

This booklet provides helpful information on the NAEP 2022 assessments for grade 4 in mathematics and reading. You’ll also find details on sample questions for these subjects in order to promote understanding of the assessment, as well as links to the 2022 survey questionnaires. Additional information for teachers and schools can be found at http://nces.ed.gov/nationsreportcard/educators, including more details about the NAEP assessment and the critical role of educators in the NAEP program.

If you have any questions or comments regarding NAEP or would like to view previous report cards, please visit the NAEP website at http://nces.ed.gov/nationsreportcard. To learn more about NAEP digitally based assessments and view tutorials, visit https://nces.ed.gov/nationsreportcard/dba.

Peggy G. Carr, PhD
Commissioner
National Center for Education Statistics
Institute of Education Sciences

NAEP is administered by the National Center for Education Statistics, within the U.S. Department of Education’s Institute of Education Sciences. Policy for the assessment, including its content and standards, is set by the independent, bipartisan National Assessment Governing Board (https://www.nagb.org).
Paperwork Reduction Act (PRA) Statement

National Center for Education Statistics (NCES) conducts the National Assessment of Educational Progress to evaluate federally supported education programs. All of the information you provide may be used only for statistical purposes and may not be disclosed, or used, in identifiable form for any other purpose except as required by law (20 U.S.C. §9573 and 6 U.S.C. §151). By law, every NCES employee as well as every NCES agent, such as contractors and NAEP coordinators, has taken an oath and is subject to a jail term of up to 5 years, a fine of $250,000, or both if he or she willfully discloses ANY identifiable information about you. Electronic submission of your information will be monitored for viruses, malware, and other threats by Federal employees and contractors in accordance with the Cybersecurity Enhancement Act of 2015.

NCES estimates the time required to complete this information collection to average 95 minutes, including the time to review instructions and complete and review the information collection. This voluntary information collection was reviewed and approved by OMB (Control No. 1850-0928). If you have any comments concerning the accuracy of the time estimate, suggestions for improving this collection, or any comments or concerns regarding the status of your individual submission, please write to: National Assessment of Educational Progress (NAEP), National Center for Education Statistics (NCES), Potomac Center Plaza, 550 12th St., SW, 4th floor, Washington, DC 20202, or send an email to: nces.information.collections@ed.gov.

OMB No. 1850-0928 APPROVAL EXPIRES 5/31/2024
II. The NAEP Assessments

NAEP Overview

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.

Each student answers questions in only one subject. Each NAEP assessment takes approximately 2 hours for a student to complete (including transition time, instructions, and completion of a survey questionnaire).

NAEP assessment results are reported for the nation in various subjects, and for states and selected large urban districts in certain subjects, but not for individual schools or students.

NAEP Frameworks

Each NAEP assessment is built around an organizing framework, which is the blueprint that guides the development of the assessment. The National Assessment Governing Board oversees the development of the NAEP frameworks, which describe the specific knowledge and skills to be assessed in each subject. Frameworks incorporate ideas and input from subject area experts, school administrators, policymakers, teachers, parents, and others. Learn more about NAEP frameworks at https://www.nagb.gov/naep-frameworks/frameworks-overview.html.

NAEP Digitally Based Assessments

In response to the changing educational landscape, the NAEP program has transitioned to digitally based assessments. These assessments allow for the collection of new types of data that provide in-depth understanding of what students know and can do in various subjects. Some questions may include multimedia, such as audio and video. Other questions may allow the use of embedded technological features (such as a scratchwork tool) to form a response, or may engage students in solving problems within realistic scenarios.

The NAEP digitally based assessments incorporate cutting-edge learning technologies. At the beginning of each assessment, students take a brief interactive tutorial designed to teach them about the system and the tools they use to take the assessment. Some parts of the tutorials are the same across subjects, while other parts are specific to each subject. For example, because mathematics uses different tools at each grade, there are different tutorials for each grade in mathematics.

To learn more about NAEP digitally based assessments and view a NAEP tutorial, visit https://nces.ed.gov/nationsreportcard/dba/.
Mathematics
Grade 4

The NAEP 2022 mathematics assessment is a digitally based assessment that is administered on sanitized tablets with keyboards. The assessment measures students’ ability to solve problems in five mathematics content areas: number properties and operations; measurement; geometry; data analysis, statistics, and probability; and algebra. Within each of these five content areas, students are asked questions of low, moderate, or high mathematical complexity. Mathematical complexity is a measure of the level of demand placed on a student’s thinking in order to answer a question correctly.

The NAEP mathematics assessment includes selected-response, short constructed-response, and extended constructed-response questions. The selected-response items may include single- and multiple-selection multiple choice, inline choice, zone (hot spot), matching, and interactive items. The short and extended constructed-response questions allow students to communicate their ideas and demonstrate the reasoning they used to solve problems. The NAEP mathematics framework specifies that short constructed-response and extended constructed-response questions combine to make up approximately 50 percent of student assessment time, and the selected-response items combine to make up the other 50 percent of student assessment time.

During the digitally based assessment, students will have access to onscreen tools that will help them interact with the assessment. Some of these tools include a scratchwork tool, a calculator, a math keyboard, zoom, a read-aloud option, and a progress bar and timer.

Calculator use is permitted on approximately 35 percent of the test questions. NAEP provides a four-function calculator for students who receive a section of questions where calculator use is permitted.

For more information regarding the mathematics assessment framework, please visit the National Assessment Governing Board’s website at https://www.nagb.gov/naep-frameworks/mathematics.html.

### NAEP Mathematics Framework
#### Distribution of Questions Across Content Areas at Grade 4

<table>
<thead>
<tr>
<th>Content Area</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number Properties and Operations</td>
<td>40%</td>
</tr>
<tr>
<td>Measurement</td>
<td>20%</td>
</tr>
<tr>
<td>Geometry</td>
<td>15%</td>
</tr>
<tr>
<td>Data Analysis, Statistics, and Probability</td>
<td>10%</td>
</tr>
<tr>
<td>Algebra</td>
<td>15%</td>
</tr>
</tbody>
</table>
Directions

Below are the General Directions for the mathematics digitally based assessment. Students will see these instructions on the screen prior to beginning the assessment.

This assessment has several sections of mathematics questions. When you are finished with these sections, you will be asked to answer questions about yourself and your experiences in and out of school.

If time runs out before you complete a section, your work will be saved.

Tap the Next arrow to begin.

Here is an example of directions a student might see during the mathematics assessment.

This section has 20 mathematics questions. You have 30 minutes to complete this section.

You cannot use the calculator in this section.

If you finish before time is up, you may review your work.

Tap the Next arrow to continue.
Sample Questions

Mathematics was most recently assessed at grade 4 in 2019. Although questions from the 2019 NAEP mathematics assessment were not released to the public, sample questions from the 2017 mathematics assessment are available online.

Each sample question contains the following:

- a brief description of the item;
- the format type (selected response or constructed response);
- the content area (number properties and operations; measurement; geometry; data analysis, statistics, and probability; or algebra); and
- details on student performance (e.g., percentage of students who answered a selected-response question correctly or who received full credit for their answer to a constructed-response question).


A complete list of questions released from the NAEP mathematics assessments is available in the NAEP Questions Tool at https://nces.ed.gov/nationsreportcard/nqt/.

Learn more about NAEP digitally based assessments and view interactive tutorials at https://nces.ed.gov/nationsreportcard/dba/.
Reading
Grade 4

The NAEP 2022 reading assessment measures students’ ability to understand, interpret, and think critically about grade-appropriate texts. Recognizing that readers vary their approach according to the demands of different types of text, the NAEP framework specifies the assessment of reading in two major text types: literary text and informational text. The assessment includes reading materials selected from publications and other resources typically available to students in and outside of school.

The framework for the NAEP reading assessment conceptualizes reading as a dynamic cognitive process. The framework suggests reading is a complex process that includes

- understanding written text;
- developing and interpreting meaning; and
- using meaning as appropriate to type of text, purpose, and situation.

The NAEP reading assessment contains selected-response questions, as well as short and extended constructed-response questions. Grade 4 students spend approximately 50 percent of their assessment time providing written answers to constructed-response questions.

In 2022, students will take a digitally based version of the reading assessment on sanitized tablets with keyboards. During the assessment, students will have access to onscreen tools that will help them navigate the assessment. These include zoom, a progress bar and timer, color themes, and an onscreen pencil and highlighter to annotate passages and items.

For more information regarding the reading assessment framework, please visit the National Assessment Governing Board’s website at https://www.nagb.gov/naep-frameworks/reading.html.

### NAEP Reading Framework Distribution of Literary and Informational Passages at Grade 4

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Literary text</td>
<td>50%</td>
</tr>
<tr>
<td>Informational text</td>
<td>50%</td>
</tr>
</tbody>
</table>
Directions

Below are the General Directions for the reading digitally based assessment. Students will see these instructions on the screen prior to beginning the assessment.

This assessment has several sections of reading passages and questions. When you are finished with these sections, you will be asked to answer questions about yourself and your experiences in and out of school.

If time runs out before you complete a section, your work will be saved.

Tap the Next arrow to begin.

Here is an example of directions a student might see during the reading assessment.

In this section, you have 30 minutes to read a passage and answer 10 questions about it.

If you finish before time is up, you may review your work.

Tap the Next arrow to continue.
Sample Questions

Reading was most recently assessed at grade 4 in 2019. Although passages and questions from the 2019 NAEP reading assessment were not released to the public, sample questions from the 2017 reading assessment are available online.

Each sample question contains the following:

- a brief description of the item;
- the format type (selected response or constructed response);
- the content area (literary text or informational text); and
- details on student performance (e.g., percentage of students who answered a selected-response question correctly or who received full credit for their answer to a constructed-response question).


A complete list of questions released from the NAEP reading assessments is available in the NAEP Questions Tool at https://nces.ed.gov/nationsreportcard/nqt/.

Learn more about NAEP digitally based assessments and view interactive tutorials at https://nces.ed.gov/nationsreportcard/dba/.
III. NAEP 2022 Survey Questionnaires

Each year, students, teachers, and school administrators who participate in the NAEP assessments voluntarily complete survey questionnaires. Student survey questionnaires collect valuable information about students’ educational experiences, opportunities to learn both in and outside of the classroom, and other factors related to student learning.

In 2022, students who take the NAEP mathematics and reading assessments will be asked to complete survey questionnaires, which are located at the end of each NAEP assessment. While they are encouraged to answer as many questions as they feel comfortable with, students can skip any part of the questionnaire by leaving a response blank.

The data collected from the survey questionnaires can help educators, policymakers, and researchers to better understand the context in which students learn, and, in turn, can help improve education in our nation’s classrooms.

To view the NAEP 2022 student survey questionnaires for the fourth-grade mathematics and reading assessments, visit https://nces.ed.gov/nationsreportcard/experience/survey_questionnaires.aspx. You’ll also find survey questionnaires for other NAEP subjects, FAQs, and general information about NAEP survey questionnaires.


Survey Questionnaire Directions

Below are the directions students will see on the screen prior to beginning the NAEP survey questionnaire.

This section contains questions about you and your experiences in and out of school. You may skip any question you do not want to answer. Answer questions about your home based on where you live most of the time during the school year.

Tap the Next arrow to continue.
IV. NAEP Questions Tool

Introduction

After every assessment cycle, the National Center for Education Statistics (NCES) releases dozens of assessment questions to the public. Teachers, researchers, and the public can access these released questions using the NAEP Questions Tool (NQT). The NQT allows users to search for questions by subject, grade, difficulty, and other characteristics. You can also view scoring guides, keys, national performance data, demographic group data, and student responses (for constructed-response questions only). The tool also allows users to create customized reports and to print selected questions and all associated information.

How do I access the NAEP Questions Tool?

The NQT is available at https://nces.ed.gov/nationsreportcard/nqt.

What can I do with the NAEP Questions Tool?

The NQT provides easy-to-follow instructions so teachers, parents, and students can

- sort and select NAEP questions;
- “test yourself” on any NAEP subject with a customizable assessment function;
- create online, self-scoring assessments that students can log in to take anytime; and
- compare results to how students performed across the nation.

If you need help navigating the NQT, there is a Help button on every page.

Where can I find more information about the subjects NAEP assesses?

The NAEP website contains a wealth of information about the subjects NAEP assesses and can be accessed at https://nces.ed.gov/nationsreportcard.

How can I get additional help?

For more help with features on the NAEP website, select “Help” on the upper-right toolbar.

For additional assistance, write to us via the Contact NAEP page at https://nces.ed.gov/nationsreportcard/contactus.aspx.
V. About NAEP

OVERVIEW. NAEP is the largest nationally representative and continuing assessment of what our nation’s students know and can do in various academic subjects. NAEP is administered by the National Center for Education Statistics (NCES), located within the U.S. Department of Education’s Institute of Education Sciences. For more information about the NAEP program, visit the NAEP website at https://nces.ed.gov/nationsreportcard.

PARTICIPATION. States and districts that receive Title I funds are required to participate in NAEP mathematics and reading assessments at grades 4 and 8 every other year. Student participation is always voluntary. Your school’s NAEP coordinator can provide you with more information. Contact your school for details.

CONTENT. The National Assessment Governing Board, an independent body of educators, community leaders, and assessment experts, sets policy for NAEP and oversees the creation of the NAEP frameworks, which describe the specific knowledge and skills that should be assessed. For additional information on framework development, visit the Governing Board’s website at https://www.nagb.gov/naep-frameworks/frameworks-overview.html.

SAMPLE QUESTIONS. For each assessment, some of the test questions, along with performance data, are made available to the public to provide concrete samples of NAEP content and results. For every assessment, NAEP provides sample questions booklets for participating schools as well as information about the assessment design and questions. Released questions and student performance data may be viewed and downloaded from the NCES website at https://nces.ed.gov/nationsreportcard/nqt.

SECURE QUESTIONS. On written request, parents and educators may review NAEP questions and instruments still in use. These arrangements must be made in advance, and persons reviewing the assessment may not remove the booklets from the room, copy them, or take notes. Contact your school's NAEP coordinator for more information.

PUBLICATIONS. NAEP reports and brochures can be searched and downloaded from the NAEP website at https://nces.ed.gov/nationsreportcard.

FOR FURTHER INFORMATION. For prompt field staff support on these or other matters, call the NAEP help desk at 800–283–6237.

The work reported herein was supported under the National Assessment of Educational Progress (91990019C0045) as administered by the National Center for Education Statistics, within the U.S. Department of Education.