

End-of-Course NC Math 1 and NC Math 3 Tests North Carolina Test Specifications

Purpose of the Tests

The NC Math 1 and NC Math 3 End-of-Course (EOC) Tests measure students' proficiency on the [North Carolina Standard Course of Study \(NCSCOS\) for Mathematics](#), adopted by the North Carolina State Board of Education in June 2016.

North Carolina State Board of Education Policy [Requirements Regarding End-of-Course Assessments](#) (TEST-003) directs schools to use the results from all operational end-of-course (EOC) assessments as at least twenty percent (20%) of the student's final course grade.

Test results will be used for school and district accountability under the accountability model and for federal reporting purposes.

Curriculum Cycle

- June 2016: The North Carolina State Board of Education adoption of the [NCSCOS for Mathematics](#)
- 2016–17: Items developed for the EOC Mathematics Tests
- 2017–18: Administration of embedded field test items for the EOC Mathematics Tests
- 2018–19: First operational administration of EOC Mathematics Tests (Edition 5)

Developing Tests

North Carolina educators were recruited and trained to write new items. The diversity among item writers and their knowledge of the current standards was addressed during recruitment. Trained North Carolina educators also review items and suggest improvements, if necessary. The use of North Carolina educators to write and review items strengthens evidence of content validity of EOC assessments.

For an in-depth explanation of the test development process, see [North Carolina State Board Policy TEST-013: Multiple Choice Test Development](#) or reference the [Test Development Process: Item, Selection, and Form Development document](#).

Prioritization of Standards

Members of the North Carolina Department of Public Instruction (NCDPI)'s Test Development Section invited North Carolina educators to collaborate and develop recommendations for a prioritization of standards indicating the relative importance of each standard, the anticipated instructional time, and the appropriateness of the standard for test design.

Subsequently, Academic Standards and Test Development staff from the

NCDPI met to review the recommendations from the teacher panels and adopt final weight distributions across the domains for each course.

Some content standards in the [NCSCOS for Mathematics](#) will not be directly assessed in the tests because either (1) the standard cannot be appropriately assessed during a limited time test using multiple-choice and/or gridded-response items and/or technology-enhanced items or (2) the standard is better assessed through another, more inclusive standard.

Tables 1 and 2 describe the range of total items by domain and Depth of Knowledge (DOK) that will appear on the EOC Mathematics Tests.

Table 1. EOC Mathematics domain weight distributions.

Domain	NC Math 1	NC Math 3
Number and Quantity and Algebra	36–40%	32–36%
Functions	32–36%	32–36%
Geometry	8–12%	20–24%
Statistics and Probability	18–20%	8–12%
Total	100%	100%

Table 2. EOC Mathematics item by DOK distribution.

Course	DOK 1	DOK 2	DOK 3
NC Math 1	20–30%	60–65%	8–12%
NC Math 3	20–30%	60–65%	8–12%

Cognitive Rigor and Item Complexity

Test items for the EOC Mathematics Tests have been designed, developed, and classified to ensure that the cognitive rigor of the operational test forms align to the cognitive complexity and demands of Webb’s Depth of Knowledge and the [NCSCOS for Mathematics](#).

Items on the EOC assessments cover the full breadth and depth of course-level cognitive expectation that can be assessed using the current test format.

Testing Structure and Test Administration

Table 3 provides the number of operational and field test items for EOC Mathematics Tests. Included in the total item counts are embedded field test items that will not be included as part of students’ final scores but will be used for purposes of developing items for future test forms.

Table 3. EOC Mathematics total number of items.

Item Type	NC Math 1	NC Math 3
Operational Items	50	50
Field Test Items	10	10
Total Items	60	60

The EOC NC Math 1 Test will include both calculator inactive and calculator active sections. Both sections will consist of four-response-option multiple-choice, gridded response/numeric entry, and technology-enhanced item types. All items will be worth one point each.

The EOC NC Math 3 Test will include only calculator active items. The EOC NC Math 3 Test will consist of four-response-option multiple-choice, gridded response/numeric entry, and technology-enhanced item types. All items will be worth one point each.

Table 4 provides the number of calculator inactive and calculator active operational test items for EOC Mathematics Tests.

Table 4. EOC Mathematics calculator inactive/active operational items.

Item Type	NC Math 1	NC Math 3
Calculator Inactive Operational Items	15	—
Calculator Active Operational Items	35	50
Total Operational Items	50	50

Based on analysis of item-completion timing data, the NCDPI estimates it will take three hours (180 minutes) for most students to complete the EOC Mathematics Tests. The NCDPI requires all students be allowed ample opportunity to complete the test. The maximum amount of time allowed is four hours (240 minutes) except for students with documented special needs requiring accommodations, such as *Scheduled Extended Time*. Refer to the *North Carolina Test Coordinators' Policies and Procedures Handbook* on the [Testing Policy and Operations webpage](#) for additional information.

Test Cycle and Delivery Mode

The EOC Mathematics Tests must be administered during the last five days (4x4/semester courses/summer school) or the last ten days (traditional yearlong schedule) of the instructional period.

According to North Carolina State Board of Education Policy [Requirements Regarding End-of-Course Assessments](#) (TEST-003), students who are enrolled for credit in courses in which EOC assessments are required shall take the appropriate assessment at the completion of the course. Refer to the *North Carolina Test Coordinators' Policies and Procedures Handbook* on the [Testing Policy and Operations webpage](#) for additional information.

The EOC Mathematics Tests are provided only in English. Native language translation versions are not available. North Carolina [G.S. §115C-81.45\(a\)](#) requires all teachers and principals to conduct all classes other than foreign language classes in English.

The EOC Mathematics Tests will be required to be administered in online administrations.

Online tests are provided through NCTest, the NCDPI's online testing platform. Schools must ensure every student participating in an online test for the North Carolina Testing Program completes the Online Assessment Tutorial for the associated test at least once at the school before test day. The tutorial provides students the opportunity to practice the mechanics of navigating through the testing platform, to become familiar with the tools, and to respond to the sample items. Refer to the *North Carolina Test Coordinators' Policies and Procedures Handbook* on the [Testing Policy and Operations webpage](#) for additional information.

Paper versions of all online tests, including required online administrations, are available for students with disabilities who need to test in the paper mode for accessibility.

Supplemental Materials and Additional Resources

Students in NC Math 1 and NC Math 3 must be provided a graphing calculator. The online version of these tests has an online calculator option. Students may practice using this [online graphing calculator](#). Refer to the [North Carolina Testing Program Calculator Requirements Assessment Brief](#) for additional information.

Upon request, all students must be provided [graph paper](#), scratch paper, and a writing utensil.

Released forms are available on the [EOC webpage](#) and through NCTest, the NCDPI's online testing platform. The released forms for the EOC Mathematics Tests are built using the same operational test specifications. A single released form may not reflect the full depth and breadth of course level assessed standards, but it reflects the range of difficulty found on any EOC operational test form.

The [NCTest tutorial page](#) has been updated to include technology-enhanced question sets for grade spans (grade three, grades four and five, middle school, and high school). These practice questions are not required but offer students additional exposure to grade-specific technology enhanced question types and may be accessed via <https://data.ncsu.edu/nctest/Tutorial.html#StudentSignIn>.

Released items may be used by public school units to acquaint students with items. These materials must not be used for personal or financial gain, are copyrighted to the NCDPI, and cannot be uploaded into third party applications. Released items may be accessed via [NCTest](#) by clicking on the released items icon.

Achievement Level Descriptors for the Edition 5 EOC Mathematics Tests were adopted by the NC State Board of Education in August 2019 and are available on the [EOC webpage](#).

A sample Individual Student Report is available on the [Individual Student Reports \(ISRs\) webpage](#).