



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

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### 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: North Carolina State Board of Education adoption of the [NCSCOS for Mathematics](#)
- 2016–17: Item development for the EOC NC Math 1 and NC Math 3 Tests
- 2017–18: Items are field tested for the EOC NC Math 1 and NC Math 3 Tests
- 2018–19: First operational administration of the EOC NC Math 1 and NC Math 3 Tests (Edition 5)

### Standards

- The eight [Standards for Mathematical Practice](#) help develop processes and proficiencies in students such as problem solving, reasoning, proof, communication, representations, and connections as well as conceptual understanding and procedural fluency. Test items that are developed for content standards may link to one or more of the Standards for Mathematical Practice.

### Developing Tests

- North Carolina educators were recruited and trained to write new items. The diversity among the 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 develop and review items strengthens the content validity of the items.
- For an in-depth explanation of the test development process see North Carolina State Board Policy [Multiple-Choice Test Development](#) (TEST-013) or reference the [Test Development Process: Item, Selection, and Form Development Process](#) document.

### Prioritization of Standards

- Members of the NCDPI/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, Standards, Curriculum and Instruction and test development staff from the NCDPI met to review the recommendations from the teacher panels and to adopt final weight distributions across the domains for each grade level.

- 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 numeric entry items or (2) the standard is better assessed through another, more inclusive standard.
- Tables 1, 2, and 3 describe the range of total items by conceptual category and Depth of Knowledge that will appear on the NC Math 1 and NC Math 3 Tests.

*Table 1: Weight Distributions for NC Math 1*

<b>Domain</b>	<b>NC Math 1</b>
Number and Quantity and Algebra	36–40%
Functions	32–36%
Geometry	8–12%
Statistics and Probability	18–20%
<b>Total</b>	<b>100%</b>

*Table 2: Weight Distributions for NC Math 3*

<b>Domain</b>	<b>NC Math 3</b>
Number and Quantity and Algebra	32–36%
Functions	32–36%
Geometry	20–24%
Statistics and Probability	8–12%
<b>Total</b>	<b>100</b>

*Table 3: EOC NC Math 1 and 3 DOK Summary*

<b>DOK Levels</b>	<b>Min %</b>	<b>Max %</b>
DOK 1	20%	30%
DOK 2	60%	65%
DOK 3	8%	12%

### **Cognitive Rigor and Item Complexity**

- Test items will be 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](#). These items will require students to not only recall information, but also apply concepts and skills and make decisions.

### **Test Structure and Administration Time**

- Included in the total item counts are embedded field test items that will not be included in the score but will be used for purposes of developing future test forms.

Table 4: EOC NC Math 1 and NC Math 3 Item Counts

Course	Number of Operational Items	Number of Field Test Items	Total Number of Items
NC Math 1	50	10	60
NC Math 3	50	10	60

### Test Administration

- The EOC NC Math 1 and NC Math 3 Tests are not designed as speeded or power tests. Students should have enough time to show what they know and are able to do. Thus, test administration times are based on analysis from item completion timing data. The NCDPI has estimated it will take about 3 hours (180 minutes) for most students to complete the EOC NC Math 1 and NC Math 3 Tests. The NCDPI requires all students be allowed ample opportunity to complete the test. The maximum amount of time allowed for regular administration is 4 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](#) for additional information.

### Types of Items and Supplemental Materials

- NC Math 1 Test will include both calculator active and calculator inactive sections. Both calculator active and inactive sections will have multiple choice, technology enhanced and numeric entry items. All items will be worth one point each.
- NC Math 3 Test will only include a calculator active section and will have multiple choice, technology enhanced and numeric entry items types. All items will be worth one point each.

Table 5: EOC NC Math 1 and NC Math 3 Calculator Active/Inactive Operational Items

Course	Calculator Active Operational Items	Calculator Inactive Operational Items	Total Operational Items
NC Math 1	35	15	50
NC Math 3	50	0	50

- Students in NC Math 1 and NC Math 3 must be provided a graphing calculator. The online version of these tests will also have an online calculator.
  - Students may practice using this online Graphing Calculator at: [www.desmos.com/testing/northcarolina/graphing](http://www.desmos.com/testing/northcarolina/graphing).
  - Refer to the [North Carolina Testing Program Calculator Requirements Assessment Brief](#) for additional information.
- All students must be provided [graph paper](#) and blank papers.
- Schools must ensure students participating in an online test for the North Carolina Testing Program complete 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](#) for additional information.

- Released forms are available on the [EOC webpage](#) and through NCTest, the NCDPI's online testing platform. The released form is built using the same operational test specifications. A single released form may not reflect the full breadth and depth of grade level assessed standards, but it reflects the range of difficulty found on any operational test form.
  - Released items may be used by Public School Units to help acquaint students with items. These materials must not be used for personal or financial gain.

### **Test Cycle and Delivery Mode**

- The NC Math 1 and NC Math 3 Tests must be administered during the last five (5) days (4x4/semester courses/summer school) or the last ten (10) 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](#) for additional information.
- The EOC tests are required to be administered online through NCTest, the NCDPI's online testing platform. Paper/pencil versions of all online tests, including required online administrations, are available for technology hardship situations and for students with disabilities who need to test in the paper mode for accessibility.
- The EOC tests are only provided in English. Native language translation versions are not available. North Carolina [G.S. §115C-81.45\(a\)](#) requires all teachers and principals to conduct classes except foreign language classes in English.

### **Additional Resources**

- Achievement level information is available on the [EOC webpage](#).
- Sample Individual Student Reports are available on the NCDPI [Individual Student Reports \(ISR\) webpage](#).