

# End-of-Course Biology Test North Carolina Test Specifications

## Purpose of the Test

The Biology End-of-Course (EOC) Test measures students' proficiency on the [North Carolina Essential Standards for Biology](#), adopted by the North Carolina State Board of Education (NCSBE) in February 2010.

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

February 2010:	North Carolina State Board of Education adoption the <a href="#">North Carolina Essential Standards for Biology</a>
2010–2011:	Items developed for the EOC Biology Test
2011–2012:	Administration of stand-alone field tests of the EOC Biology Test
2012–2013:	First operational administration of the EOC Biology Test (Edition 4)

## 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 the course.

Some content standards in the [North Carolina Essential Standards for Biology](#) will not be directly assessed in the tests because the standard cannot be appropriately assessed during a limited time test using multiple-choice and/or technology-enhanced items.

Table 1 describes the range of total items by unifying concept that will appear on the EOC Biology Test.

**Table 1. EOC Biology unifying concept weight distributions.**

<b>Unifying Concept</b>	<b>Biology</b>
Structure and Function of Living Organisms	18–22%
Ecosystems	18–22%
Evolution and Genetics	43–53%
Molecular Biology	15–19%
<b>Total</b>	<b>100%</b>

Appendix A shows the number of operational items by standard. Note that future coverage of standards could vary within the constraints of the content category weights in Table 1.

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

Test items for the EOC Biology Test 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 Revised Bloom’s Taxonomy and the [North Carolina Essential Standards for Science](#). Items on the EOC assessments cover the full breadth and depth of grade-level cognitive expectation that can be assessed using the current test format.

### **Testing Structure and Test Administration**

Table 2 provides the number of operational and field test items for the EOC Biology Test. 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 2. EOC Biology total number of items.**

<b>Course</b>	<b>Biology</b>
Operational Items	60
Field Test Items	10
<b>Total Items</b>	<b>70</b>

The EOC Biology Test will consist of four-response-option multiple-choice and technology-enhanced item types. All items will be worth one point each.

Based on analysis of item-completion timing data, the NCDPI estimates it will take 2 hours (120 minutes) for most students to complete the EOC Biology Test. The NCDPI requires all students be allowed ample opportunity to complete the test. The maximum amount of time allowed is 3 hours (180 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 Biology Test 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 Biology Test is 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 Biology Test 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**

All students must be provided 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 Biology Test 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.

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 4 EOC Biology Test were adopted by the NC State Board of Education in August 2019 and are available on the [EOC webpage](#).

A sample Individual Student Report for the Edition 4 EOC Biology Test is available on the [Individual Student Reports \(ISRs\) webpage](#).

## Appendix A

### Biology Number of Operational Items by Clarifying Objective

The following table shows the approximate number of operational items for each clarifying objective. Note that future coverage of objectives could vary within the constraints of the content category weights in Table 1. Some objectives not designated with tested items (i.e., “—”) may be a prerequisite standard, may be tested within the context of another standard or may be included as an embedded field test item.

**Table 1. EOC Biology number of operational items by clarifying objective.**

<u>Biology Objective</u>		Number of Operational Items by Objective
Structure and Functions of Living Organisms	1.1.1	2
	1.1.2	1–2
	1.1.3	3
	1.2.1	2
	1.2.2	1–3
	1.2.3	1–2
Ecosystems	2.1.1	1–2
	2.1.2	1–2
	2.1.3	1–3
	2.1.4	1–2
	2.2.1	2–3
	2.2.2	2–4

<b><u>Biology Objective</u></b>		<b>Number of Operational Items by Objective</b>
Evolution and Genetics	3.1.1	1–3
	3.1.2	2–3
	3.1.3	1–2
	3.2.1	2–3
	3.2.2	1
	3.2.3	2–4
	3.3.1	2–3
	3.3.2	2
	3.3.3	—
	3.4.1	2–3
	3.4.2	2–3
	3.4.3	1–2
	3.5.1	2–3
	3.5.2	2
Molecular Biology	4.1.1	2
	4.1.2	2–3
	4.1.3	1
	4.2.1	2
	4.2.2	1–2