



## 2015–2016 NC Final Exams of 4<sup>th</sup> Grade Science

### North Carolina Assessment Specifications

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#### **Purpose of the Assessments**

- NC Final Exams were developed to replace locally developed assessments, providing teachers and principals with a common measure for all students state-wide during a given testing window.
- North Carolina Final Exams for Elementary and Middle Grades Science courses will measure students' academic progress in the NC *Essential Standards*, adopted by the North Carolina State Board of Education in June 2010. The NC *Essential Standards* are posted at: [www.ncpublicschools.org/acre/standards/new-standards](http://www.ncpublicschools.org/acre/standards/new-standards).
- NC Final Exam scores (along with any other relevant end-of-course or end-of-grade assessment scores) will be used in the Educational Value Added Assessment System (EVAAS) to produce student growth measures to satisfy Standards 6 and 8 of the North Carolina Educator Evaluation System. For more information on the North Carolina Educator Evaluation System, go to: [www.ncpublicschools.org/effectiveness-model/](http://www.ncpublicschools.org/effectiveness-model/).
- NC Final Exams will not be used for school and district accountability under the READY Accountability Model or for Federal reporting purposes.

#### **Developing Assessments**

North Carolina educators were recruited and trained to write new items for the NC Final Exams. 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 instructional validity of the items. If a teacher is interested in training to become an item writer or reviewer for the North Carolina Testing Program, he/she can visit [https://center.ncsu.edu/nc/x\\_courseNav/index.php?id=21](https://center.ncsu.edu/nc/x_courseNav/index.php?id=21).

- For an in-depth explanation of the test development process see State Board policy GCS-A-013 or reference <http://www.ncpublicschools.org/accountability/testing/shared/testdevprocess>.

### Curriculum and Assessment Cycle

- 2010: North Carolina State Board of Education adoption of the NC *Essential Standards*.
- 2012–13: Operational administration of the Measures of Student Learning: Common Exams.
- 2013–14: Redesign and subsequent first operational administration of the NC Final Exams.
- 2014–15: Second operational administration of the NC Final Exams.
- 2015–16: Third operational administration of the NC Final Exams.

### Prioritization of Standards

□ Members of the Test Development section of the North Carolina Department of Public Instruction (NCDPI) invited teachers to collaborate and develop recommendations for a prioritization of the standards indicating the relative importance of each standard, the anticipated instructional time, and the appropriateness of the standard for multiple-choice and constructed response item formats.

□ Table 1 describes the percentage range of total score points that will appear on the NC Final Exam in Science Grade 4. The NC Final Exam in Science Grade 4 will only contain multiple-choice items. The table of test specification weights describe the percent of total score points, rather than the percent of total items.

*Table 1. Test Specification Weights for the 4<sup>th</sup> Grade Science NC Final Exam*

Standards	Percent of Total Score Points
<b>Physical Science</b>	
4.P.1	8% to 12%
4.P.2	10% to 14%
4.P.3	7% to 11%
<b>Earth Science</b>	
4.E.1	8% to 12%
4.E.2	10% to 14%
<b>Life Science</b>	
4.L.1	22 % to 26%
4.L.2	14% to 18%
Total	100%

### Cognitive Rigor

□ NC Final Exams items in Grade 4 Science were aligned to the NC *Essential Standards* using the Revised Bloom’s Taxonomy (RBT). To learn more about RBT, go to: [www.ncpublicschools.org/acre/standards/](http://www.ncpublicschools.org/acre/standards/).

### Types of Items and Supplementary Materials

- All NC Final Exams in Elementary and Middle Grade Science contains four-response-option multiple-choice items.
- A complete list of the supplemental test materials (i.e., *NC Final Exams Materials List*) may be reviewed at <http://www.ncpublicschools.org/accountability/common-exams/>.
- Released items, any necessary formula/reference sheets, and graph paper (if applicable) are available at <http://www.ncpublicschools.org/accountability/common-exams/released-items15/>. Released items may be used by school systems to help acquaint students with items. These materials must not be used for personal or financial gain.

### Testing Structure and Test Administration Time

- The NC Final Exam in 4<sup>th</sup> Grade Science contains a total of 40 multiple-choice items.
- Included in the total item counts are embedded multiple-choice field test items that will not count toward the students score but will be used for purposes of developing items for future test forms.

NC Final Exam 2015–16	Number of Operational Items	Number of Field Test Items*	Total Number of Items
Science Grade 4	35 multiple-choice	5 multiple-choice	40

\*Field test items will not count toward the students score but will be used for purposes of developing items for future test forms.

- Students will be given 120 minutes to answer all items.
- Appendix A shows the number of operational test items for each clarifying objective for the 2015–16 exam. Note that future coverage of objectives could vary within the constraints of the content category weights in *Table 1*.

### Test Cycle and Delivery Mode

- The NC Final Exam of Science Grade 4 is available for administration during the spring cycle only. A list of course codes that align with the 2015–16 NC Final Exams (i.e., *Course Codes that Align with the NC Final Exams*) is available at <http://www.ncpublicschools.org/accountability/common-exams/>.
- The NC Final Exams are available for paper-and-pencil and online administration modes for the 2015–16 academic year.

**Appendix A**  
**Grade 4 Science NC Final Exam 2015–16**  
**Number of Items by Clarifying Objectives**

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

Grade 4 Science Clarifying Objectives	Number of Items per Objective
<b>Explain how various forces affect the motion of an object.</b>	
4.P.1.1	2
4.P.1.2	2
<b>Understand the composition and properties of matter before and after they undergo a change or interaction.</b>	
4.P.2.1	–
4.P.2.2	2
4.P.2.3	3
<b>Recognize that energy takes various forms that may be grouped based on their interaction with matter.</b>	
4.P.3.1	2
4.P.3.2	2
<b>Explain the causes of day and night and phases of the moon.</b>	
4.E.1.1	2
4.E.1.2	2
<b>Understand the use of fossils and changes in the surface of the earth as evidence of the history of Earth and its changing life forms.</b>	
4.E.2.1	1
4.E.2.2	2
4.E.2.3	2
<b>Understand the effects of environmental changes, adaptations and behaviors that enable animals (including humans) to survive in changing habitats.</b>	
4.L.1.1	2
4.L.1.2	3
4.L.1.3	1
4.L.1.4	2

<b>Understand food and the benefits of vitamins, minerals and exercise.</b>	
4.L.2.1	2
4.L.2.2	3