



## ***Essential Standards* for High School Science Courses**

### **North Carolina Assessment Specifications Summary**

#### **NC Final Exams for Earth and Environmental Science, Physical Science, Physics, and Chemistry**

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

- NC Final Exams for High School Science courses will measure students' academic progress in the *Essential Standards*, adopted by the North Carolina State Board of Education in June 2010.
- 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 <http://www.ncpublicschools.org/effectiveness-model/>.
- NC Final Exams were developed to replace locally developed assessments, providing teachers and principals with a NC Final Exams measure for all students state-wide during a given testing window.
- NC Final Exams will NOT be used for school and district accountability under the READY Accountability Model or for Federal reporting purposes.

##### **Curriculum Cycle**

- 2010: North Carolina State Board of Education adoption of the *Essential Standards*.
- 2011–2012: Item development for the NC Final Exams.
- Spring 2013: First year the NC Final Exams will be administered operationally.

##### **Standards**

- The *Essential Standards* are posted at: <http://www.ncpublicschools.org/acre/standards/new-standards>.

##### **Prioritization of Standards**

- The North Carolina Department of Public Instruction 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 (MC) and constructed response (CR) item formats. Subsequently, curriculum and test development staff from the North Carolina Department of Public Instruction met to review the results from the teacher panels and to develop weight distributions across the domains for each grade level.
- Tables 1 through 4 describe the range of percentage of test questions that will appear on a given form of the NC Final Exams in High School science courses (Earth and Environmental, Physical Science, Physics, and Chemistry). All High School NC Final Exams contain MC items. Two of these

Common Exams (Physics and Chemistry) contain both multiple choice (MC) items and constructed response (CR) items. The greater emphasis on CR items in Physics and Chemistry reflect the conceptual nature of the standards which are best measured with open-ended questions. A portion of testing time and a greater number of the total score points (one CR item worth 2 points) are allocated to answering the CR questions.

*Table 1. Test Specification Weights for the NC Final Exams for Earth and Environmental Science*

Standards	Category Percent
Earth in the Universe	
EEn.1.1	11% to 16%
Earth Systems, Structures, and Processes	
EEn.2.1	11% to 17%
EEn.2.2	11% to 17%
EEn.2.3	4% to 10%
EEn.2.4	7% to 12%
EEn.2.5	4% to 10%
EEn.2.6	7% to 10%
EEn.2.7	14%-19%
EEn.2.8	9%-14%
<i>Total Score Points</i>	<i>100%</i>

*Table 2. Test Specification Weights for the NC Final Exams for Physical Science*

Standards	Category Percent
Forces and Motion	
PSc.1.1	2% to 7%
PSc.1.2	9% to 14%
Matter: Properties and Change	
PSc.2.1	11% to 17%
PSc.2.2	23% to 31%
PSc.2.3	2% to 7%

Energy: Conservation and Transfer	
PSc.3.1	7% to 10%
PSc.3.2	14%-19%
PSc.3.3	9%-14%
<i>Total Sore Points</i>	<i>100%</i>

*Table 3. Test Specification Weights for the NC Final Exams for Physics*

Standards	Category Percent	Constructed Response
Forces and Motion		
Phy.1.1	7% to 12%	1% to 3%
Phy.1.2	7% to 12%	1% to 3%
Phy.1.3	7% to 12%	0%
Energy: Conservation and Transfer		
Phy.2.1	12% to 17%	0%
Phy.2.2	7% to 12%	0%
Phy.2.3	14% to 19%	1% to 3%
Interactions of Energy and Matter		
Phy.3.1	12% to 17%	0%
Phy.3.2	9% to 14%	0%
<i>Total Sore Points</i>	<i>97%-99%</i>	<i>1% -3%</i>

*Table 4. Test Specification Weights for the NC Final Exams for Chemistry*

Standards	Category Percent	Constructed Response
Matter: Properties and Change		
Chm.1.1	11% to 17%	0%
Chm.1.2	14% to 19%	0%
Chm.1.3	4% to 10%	1% to 4%

### Energy: Conservation and Transfer

Chm.2.1	14% to 19%	0% to 2%
Chm.2.2	14% to 19%	0% to 2%

### Interactions of Energy and Matter

Chm.3.1	7% to 12%	0%
Chm.3.2	12% to 17%	0% to 3%

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<i>Total Sore Points</i>	<i>96%-99%</i>	<i>1% -4%</i>
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### **Cognitive Rigor**

NC Final Exams items in High School Science were aligned to the Essential Standards using the Revised Bloom's Taxonomy (RBT). To learn more about RBT go to:

<http://www.ncpublicschools.org/acre/standards/>.

### **Types of Items**

All NC Final Exams in High School Science will contain four-response-option multiple-choice (MC) items. Physics and Chemistry will also have constructed response (CR) items.

Students taking the Physical Science, Physics, and Chemistry NC Final Exams should be provided with a reference table and a scientific calculator. Earth and Environmental Science NC Final Exam should only be provided a scientific calculator.

### **Testing Structure and Time**

NC Final Exams in High School Science contains a total of 45 MC items. Physics and Chemistry will also have 2 CR items.

The total time allocated to the test is 120 minutes unless students have documented accommodations (i.e., Multiple Testing Sessions, Extended Time). Students should monitor the clock to ensure they allow themselves adequate time to respond to all items.

### **Delivery Mode**

The NC Final Exams are designed for paper/pencil mode only.