North Carolina End-of-Grade Test of Science Grade 8

What are the purposes of the NC Testing Program?

The North Carolina End-of-Grade (EOG) Test of Science at Grade 8 is designed to measure student performance on the competencies specified in the goals and objectives of the North Carolina *Standard Course of Study* (SCS) in science at grade 8.

The North Carolina EOG Test of Science at Grade 8 is required to be implemented effective with the 2007-08 school year as an operational administration in order to meet the federal *No Child Left Behind Act* of 2001. The grade 8 EOG science test was administered as a statewide pilot during the 2006-07 school year. As a component of the statewide North Carolina Annual Testing Program, these tests at the state level are required under General Statute 115C-174.10 which states the purposes of North Carolina state-mandated tests are "(i) to assure that all high school graduates possess those minimum skills and that knowledge thought necessary to function as a member of society; (ii) to provide a means of identifying strengths and weaknesses in the education process in order to improve instructional delivery; and (iii) to establish additional means for making the education system at the State, local, and school levels accountable to the public for results."

What is measured by the test?

The grade 8 science EOG test assesses the 2004 North Carolina *Standard Course of Study* grade 8 science competencies. The test requires students to demonstrate knowledge of important principles and concepts, understand and interpret laboratory activities, and relate scientific information to everyday situations. In order to align with this curriculum's focus on inquiry and higher order thinking, these tests have a substantial focus on processing information and higher order thinking. Information about the content of these objectives can be obtained from the North Carolina Department of Public Instruction web site at http://www.dpi.state.nc.us/curriculum/science/scos/.

Descriptive Information for the North Carolina End-of-Grade Test of Science—Grade 8

Goal	Description of Goal	Percentage of Questions on Test*
1	The learner will design and conduct investigations to demonstrate an understanding of scientific inquiry.	48%-52%**
2	The learner will demonstrate an understanding of technological design.	28%-32%**
3	The learner will conduct investigations and utilize appropriate technologies and information systems to build an understanding of the hydrospace.	28%-32%
4	The learner will conduct investigations and utilize technology and information systems to build an understanding of chemistry.	25%-30%
5	The learner will conduct investigations and utilize appropriate technologies and information systems to build an understanding of evidence of evolution in organisms and landforms.	20%-25%
6	The learner will conduct investigations, use models, simulations, and appropriate technologies and information systems to build an understanding of cell theory.	8%-12%
7	The learner will conduct investigations, use models, simulations, and appropriate technologies and information systems to build an understanding of microbiology.	8%-12%

* All questions on the test have the same weight; therefore, the percentage of questions on the test represents the relative weight of the content of that goal in a student's score.

** Goals 1 and 2 are integrated so that approximately 76-84% of the items will measure Goal 1 or Goal 2 and a second objective from Goals 3-7.

How is the test administered?

The North Carolina End-of-Grade Test-Grade 8 Science is a multiple-choice test that is administered during the final three weeks of the school year. The EOG Grade 8 test in science consists of 80 questions.

In order to allow students to demonstrate higher-order thinking and learning, the EOG science tests are designed as virtually untimed tests rather than speeded tests. Sufficient time is allotted for the majority of the students to complete the test in a standard administration. The time schedule was determined from student performance during the field test administration.

Several equivalent test forms are administered in each classroom to provide a greater breadth of coverage for curriculum evaluation and planning. For each test form, most of the items are scored to count toward the student's score. The other items are experimental items included for field testing or for other research purposes. These experimental items are not included in any reporting or in any accountability decisions, whether at the student, classroom, school, or school district level.

How was the test developed?

Trained North Carolina teachers and educators were involved in the development of the grade 8 science items during 2003-05. They assisted in the writing of the items and/or the review of items during the development phase. Common curriculum items for grade 8 were field tested during the 2004-05 school year. Items measuring the newly adopted 2004 *Standard Course of Study* were field tested during the 2005-06 school year. The first pilot test administration of the science test was implemented during the spring 2007. The first statewide operational of the grade 8 science tests is scheduled to be administered in the Spring of 2008.

What kinds of scores do students receive on the test?

On the grade 8 science test, students receive scale scores, percentile ranks, and achievement levels. The scale will be defined during the summer of 2007. In addition, students will receive a percentile score which will show the student's performance relative to other students who were administered the test the first operational year (2008). The use of scale scores provides for easier and more consistent interpretations of the results from test to test. Achievement levels will also be generated to provide an interpretation of student performance relative to a predetermined standard. Student scores are converted to one of the four achievement level categories shown below. The four achievement levels are typically established by linking teacher judgments to the performance distribution of student scores from the field test or the first operational administration of the test. The achievement levels may also be established using a panel of stakeholders (teachers and others) who use an item-mapping method to see how well the cut scores align with what students know and are able to do based on the results from the tests. Descriptors or expectations based on the content are also provided as the result of the process used to determine the achievement level cut scores.

Achievement Levels for the North Carolina End-of-Grade Test of Science—Grade 8

Level	Description	Scale Score Range
1	Students performing at this level do not have sufficient mastery of knowledge and skills in this subject area to be successful at the next grade level.	TBD
2	Students performing at this level demonstrate inconsistent mastery of knowledge and skills in this subject area and are minimally prepared to be successful at the next grade level.	TBD

3	Students performing at this level consistently demonstrate mastery of grade level subject matter and skills and are well prepared for the next grade level.	TBD
4	Students performing at this level consistently perform in a superior manner clearly beyond that required to be proficient at grade level work.	TBD

How will scores be used? For the 2007-08 school year, no decision has been made at the state or federal level if the scores will be used for either the ABCs or AYP Accountability Systems. Scores will be reported at the student, school, district, and state levels. We will update this when we have more information.

Sample Items Sample items for the North Carolina End-of-Grade Test of Science – Grade 8 can be found at http://www.dpi.state.nc.us/accountability/testing/eog/science/. The category and objective correspond to the category and curriculum objective that the item is designed to measure. The thinking skill corresponds to the level of thinking the item requires as defined by a thinking skills framework adapted from *Dimension of Thinking* by Robert J. Marzano and others.