

Assessment Brief



Public Schools of North Carolina

State Board of Education • Phillip J. Kirk, Jr., Chairman • North Carolina Department of Public Instruction • Michael E. Ward, Superintendent

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Understanding End-of-Course Testing: Achievement Levels

The North Carolina *Standard Course of Study* outlines the content standards by describing the knowledge and skills that students should acquire in the various content areas. When the end-of-course tests were initially developed, educators in North Carolina felt that performance standards which identify levels of competency expected in each of the content areas should also be developed. Performance standards, called achievement levels, are one way that scores on the North Carolina End-of-Course Tests are reported. Unlike percentiles, which yield only relative comparisons, the achievement levels give common meaning throughout the state as to what is expected at various levels of competence in each course. These categories are used to better describe the scores on the tests and are based on external evidence about the relative performance of students.

The achievement levels or performance standards for the multiple-choice North Carolina End-of-Course Tests were set using the contrasting groups method of standard setting. This method involves having students categorized into the various achievement levels by expert judges (North Carolina teachers) who are knowledgeable about the students' achievement assessed in the various domains outside of the testing situation. Teachers are able to make informed judgments about students' achievement because teachers have observed the breadth and depth of the work each student has accomplished during the school year.

During the initial field testing for each end-of-course test, teachers were asked to categorize each of their students on the basis of "absolute" achievement (comparison to an external standard). Each student was categorized into one of the following four achievement levels based on the teacher's experiences with the student throughout the school year. Teachers were also given the option of categorizing the student as "Not a clear example of any of these achievement levels" if the student was not a clear exemplar of any of the four achievement levels.

Level I	Students performing at this level do not have sufficient mastery of knowledge and skills of the course to be successful at a more advanced level in the content area.
Level II	Students performing at this level demonstrate inconsistent mastery of knowledge and skills of the course and are minimally prepared to be successful at a more advanced level in the content area.
Level III	Students performing at this level consistently demonstrate mastery of the course subject matter and skills and are well prepared for a more advanced level in the content area.
Level IV	Students performing at this level consistently perform in a superior manner clearly beyond that required to be proficient in the course subject matter and skills and are very well prepared for a more advanced level in the content area.

In all, the judgments of more than 1,800 teachers about the performance of approximately 67,000 students were involved in the standard setting process statewide. About 80% of the students field tested were categorized into one of the four achievement levels, with the remainder categorized as not a clear example of any of the achievement levels or not categorized at all.

The percentage of students in each achievement level were remarkably similar across subjects. The percentages are presented in Table 1 (below). The percentages of students shown in Table 1 for each content area were used in conjunction with the frequency distributions of scores from the first administration of the each multiple-choice North Carolina End-of-Course Test to determine where the cut points should be for the achievement levels.

Table 2 gives the range of scores associated with each achievement level. The North Carolina State Board of Education approved the achievement levels for (1) Algebra I; biology; Economic, Legal, and Political Systems (ELP); English I; and US History in September 1997 and (2) Algebra II, chemistry, geometry, physical science, and physics in October 1998.

Table 1. Percent of students assigned to each achievement level by teachers.

Subject Area	Level I	Level II	Level III	Level IV
Algebra I	13%	33%	40%	13%
Algebra II	15%	32%	38%	16%
Biology	17%	31%	36%	15%
Chemistry	17%	31%	36%	16%
ELP	14%	27%	36%	23%
English I	13.4%	32.3%	35.4%	18.9%
Geometry	17%	31%	34%	18%
Physical Science	18%	33%	36%	13%
Physics	8%	25%	45%	22%
US History	17%	34%	34%	15%

Table 2. Range of scores associated with each achievement level for score reporting.

Subject Area	Level I	Level II	Level III	Level IV
Algebra I	23-44	45-54	55-65	66-87
Algebra II	23-45	46-57	58-68	69-88
Biology	26-46	47-54	55-64	65-87
Chemistry	23-47	48-55	56-64	65-88
ELP*	21-42	43-51	52-60	61-87
ELP**	0-29	30-42	43-53	54-67
English I	22-42	43-51	52-60	61-85
Geometry	23-45	46-56	57-66	67-87
Physical Science	23-43	44-53	54-63	64-87
Physics	23-42	43-51	52-62	63-87
US History	27-47	48-56	57-64	65-88

* Achievement level ranges for ELP for the 1996-97 school year and beyond are based on scale scores.

** Achievement level ranges for ELP for 1995-96 and earlier are based on raw scores.