

XI.A.

CONNECTICUT STATE BOARD OF EDUCATION
Hartford

TO BE PROPOSED:
July 7, 2010

RESOLVED, That the State Board of Education, pursuant to a requirement of the No Child Left Behind Act (NCLB), approves the achievement standards for reading and mathematics for the Connecticut Mastery Test (Grades 3-8) and the Connecticut Academic Performance Test (Grade 10) Modified Assessment System as set forth in the Commissioner's July 7, 2010, memorandum, "Reading and Mathematics Achievement Standards: Modified Assessment System," and directs the Commissioner to take the necessary action.

Approved by a vote of _____ 8:0 _____, this seventh day of July, Two Thousand Ten.

Signed: 
Mark K. McQuillan, Secretary
State Board of Education

CONNECTICUT STATE BOARD OF EDUCATION
Hartford

TO: State Board of Education

FROM: Mark K. McQuillan, Commissioner of Education

SUBJECT: Reading and Mathematics Achievement Standards: Modified Assessment System

The No Child Left Behind Act (NCLB) requires that achievement standards be established for all assessments, including alternate assessments, in the statewide accountability system and that the standards be officially approved by the State Board of Education. The Connecticut Mastery Test Modified Assessment System (CMT MAS) and Connecticut Academic Performance Test Modified Assessment System (CAPT MAS) were designed as alternate assessments for students with disabilities, in Grades 3-8 and 10, whose disabilities preclude them from achieving proficiency on the standard grade-level tests. The MAS tests measure content standards aligned with grade-level expectations in Grades 3-8 and 10, but with modifications that make the tests more accessible and instructionally meaningful to this subgroup of students with disabilities. The tests were administered as part of the spring 2010 operational testing.

A report summarizing the procedures used to develop the CMT and CAPT MAS, as well as the recommended MAS achievement standards for each grade, was presented to the Board as a discussion item in March 2010. That board report may be found in Appendix A.

Based on pilot data and the work of the advisory standard-setting committee, the Department recommends the adoption of standards for the Grade 3-8 and 10 MAS tests. After analyzing impact data from the first MAS administration in March 2010, the Department confirmed that the performance standards for the Grade 3-8 and 10 mathematics test, as well as the Grade 10 reading test, were appropriate. However, the standards for Grades 3-8 MAS reading were adjusted slightly for two reasons. First, the weighting normally applied to the reading comprehension component of the reading test was not applied during the first round of standard setting. Second, the impact data showed lower performance in four grades than that anticipated by the standard-setting committee. Accordingly, weights were applied and cut points were adjusted down for four grades by 1 raw-score point.

The final scale score cut points along with percentages of students expected to score at or above the Grade 3-8 and 10 MAS achievement standards are presented below. The achievement standards, as adjusted, will be applied in all future MAS administrations within the current test generation.

Cut Scores and Percentages at Achievement Levels

CMT MAS Mathematics

Grade	Cut Scores		Percent at Each Performance Level		
	Proficient	Goal	Basic	Proficient	Goal
3	223	256	25	29	46
4	225	262	28	31	41
5	224	268	30	33	37
6	224	261	27	32	41
7	257	287	55	25	20
8	261	295	60	24	16

CMT MAS Reading

Grade	Cut Scores		Percent at Each Performance Level		
	Proficient	Goal	Basic	Proficient	Goal
3	256	276	55	15	30
4	230	270	35	29	36
5	231	271	34	32	34
6	253	299	51	33	16
7	246	281	44	30	26
8	237	263	36	22	42

CAPT MAS Reading and Mathematics

Subject	Estimated Cut Scores		Percent at Each Performance Level		
	Proficient	Goal	Basic	Proficient	Goal
Mathematics	263	292	63	19	18
Reading	241	270	40	24	36

Prepared by:

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Bureau of Student Assessment

Reviewed by:

Robert Lucco, Ed.D., Chief
Bureau of Student Assessment

Approved by:

Barbara Q. Beaudin, Ed.D., Associate Commissioner
Division of Assessment, Research and Technology

July 7, 2010

CONNECTICUT STATE BOARD OF EDUCATION
Hartford

TO: State Board of Education

FROM: Mark K. McQuillan, Commissioner of Education

SUBJECT: Reading and Mathematics Achievement Standards for the Connecticut Mastery Test (Grades 3-8) and Connecticut Academic Performance Test (Grade 10) Modified Assessment System

The No Child Left Behind Act (NCLB) requires that achievement standards be established for all assessments, including alternate assessments, in the statewide accountability system and that the standards be officially approved by the State Board of Education. The Connecticut Mastery Test Modified Assessment System (CMT MAS) and Connecticut Academic Performance Test Modified Assessment System (CAPT MAS) were designed as alternate assessments for students with disabilities in Grades 3-8 and 10 whose disabilities preclude them from achieving proficiency on the standard grade-level tests. The MAS Tests measure content standards aligned with grade-level expectations in Grades 3-8 and 10, but with modifications that make the tests more accessible and instructionally meaningful to this subgroup of students with disabilities. The tests will be implemented as part of the spring 2010 operational testing.

This report summarizes the procedures used to develop the CMT and CAPT MAS as well as the recommended MAS achievement standards for each grade. The recommendations take into consideration input from our MAS Standard-Setting Committees and impact data based on results from a field test, which took place in spring 2009, together with results from past CMT and Connecticut CAPT administrations. The Standard-Setting Committees were selected to be representative of a diverse group of Connecticut educators in terms of district socioeconomic factors, gender, race and other relevant factors. A list of panel members is included in Appendix B. All procedures were discussed with and approved by our Technical Advisory Committee (TAC) prior to implementation. The TAC is composed of nationally recognized experts in the measurement field. A list of the TAC members is included in Appendix C.

Overview of the Development of the MAS for Grades 3-8 and 10

The purpose of the MAS in Grades 3-8 and 10 is to provide accountability measures, which determine the extent to which students with disabilities have been given the opportunity to participate in and benefit from the general education curriculum. The MAS, as required by NCLB legislation, has been designed to align with the skills and objectives outlined in the Connecticut reading/language arts and mathematics curriculum frameworks in Grades 3-8 and 10. Each indicator on the MAS corresponds to a content standard (objective) that can be found in the reading/language arts and mathematics curriculum frameworks, and reflects the same grade-level skills found on the CMT and

CAPT assessments. In effect, the MAS tests are modified versions of the CMT and CAPT that allow better accessibility to the tests and greater discrimination among this target population. The contents of the CMT and CAPT MAS are described below. A description of the modifications applied to the standard tests to build the MAS may be found in Appendix A. As with other student assessments, Connecticut educators will receive comprehensive score reports for individual students that may be used to:

- inform instruction;
- monitor student progress; and
- document student achievement.

Description of the CAPT MAS

The CAPT MAS Reading consists of two tests: **Response to Literature and Reading for Information**. On the **Response to Literature** test, students read a short story and respond to short-answer and multiple-choice questions measuring how well students can demonstrate understanding, interpret meaning and make connections. The test includes four open-ended and 10 multiple-choice questions, and will be administered in one 70-minute session.

The **Reading for Information** test requires students to read two nonfiction articles from newspapers or magazines. Students respond to multiple-choice questions measuring how well they understand information from the texts and evaluate the way the author wrote the articles. The test includes 18 multiple-choice questions and will be administered in a 45-minute session.

The CAPT MAS Mathematics assesses how well students can compute and estimate, solve problems and communicate their understanding. The test assesses knowledge from four content strands: (1) Algebraic Reasoning: Pattern and Functions; (2) Numerical and Proportional Reasoning; (3) Geometry and Measurement; and (4) Working with Data: Probability and Statistics. The test includes four open-ended (short answer) and 24 multiple-choice questions equally distributed across the four content strands. The test will be administered in two 75-minute sessions. Students are allowed to use a calculator, ruler and formula chart during the test.

Description of the CMT MAS

The Reading CMT MAS consists of two subtests: **Degrees of Reading Power® (DRP)** and **Reading Comprehension**. The DRP assesses students' abilities to understand what has been read. The DRP is a holistic, multiple-choice measure of reading ability. The DRP is a 45-minute test that includes several passages on various topics. It is designed to measure a student's ability to understand nonfiction English prose on a graduated scale of reading difficulty by systematically deleting words from each passage so students must use context clues and other comprehension skills to fill in the blanks. Students select from four answer choices in a 'cloze' procedure to replace each missing word from provided passages.

The Reading Comprehension test assesses students' abilities to read and understand fiction and nonfiction passages. The Reading Comprehension subtest consists of narrative and informational passages on a variety of topics. The test is comprised of two 45-minute sessions. It includes passages with multiple-choice questions and open-ended questions that require students to write a response. A student's reading ability is reported in four strands: (1) Forming a General Understanding; (2) Developing Interpretation; (3) Making Reader/Text Connections; and (4) Examining the Content and Structure.

The Mathematics CMT MAS assesses students' knowledge of mathematics skills and concepts along with their ability to solve realistic problems. The Mathematics CMT MAS pulls from 25 content strands, which are represented and aligned with the content and performance standards delineated in the *PreK-8 Connecticut Mathematics Curriculum Standards*. The test includes multiple-choice questions and a limited number of open-ended questions that require students to write a response. Students will be administered two 60-minute test sessions in Grades 3 and 4, and three 60-minute test sessions in Grades 5 through 8.

Standard Setting Procedures

The MAS pilot items were field tested in May 2009. Measurement Incorporated (MI), the state's prime test contractor, assisted the Department in the standard-setting process over a two-week period (October 13-16 and 20-23, 2009). Unlike the standard CMT or CAPT where there are five achievement levels (Below Basic, Basic, Proficient, Goal and Advanced), there are three achievement levels (Basic, Proficient and Goal) on the MAS.

The Bookmark procedure developed by Cizek & Bunch (2007), was selected to set MAS standards for the following purposes. First, the procedure is especially useful to employ with mixed-format tests, i.e., tests containing both selected-response and open-ended response items. (The format of the MAS tests is a mix of multiple-choice [MC] and open-ended [OE] items). Second, the Bookmark method reduces the burden on panelists when standard-setting entails examining large numbers of items. Below is a description of the procedure.

Panelists received a thorough description of the assessments and an explanation of how the assessments were scored, as well as a description of the intended uses of the tests. They were also provided an opportunity to familiarize themselves with the assessment instruments from the perspective of the examinee. They were then introduced to the Performance Level Descriptors or PLDs. These are statements describing in some detail what a student at the Basic, Proficient or Goal level of performance can do.

Panelists were then introduced to the Bookmark procedure, thoroughly trained in its use and provided multiple opportunities for evaluation of their understanding of the procedure through discussion and completion of readiness forms.

There were seven grade-level panels. Panelists independently examined test items in a difficulty-ordered booklet, which consisted of the items from the actual tests but arranged in order of difficulty, with the easiest item on the first page and the most difficult item on the last page. Each page also contained essential statistical information, as well as other information about the item. Panelists determined whether or not students at a minimum level of Proficient or Goal would have a two-thirds or greater chance of answering each item correctly.

Panelists for each grade-level panel entered two bookmarks on a special form, one each for the last page they believed a minimally Proficient or minimally Goal-level student would have a two-thirds chance or greater of answering correctly. The page number is associated with an ability level required for a two-thirds chance or greater of answering correctly. These ability levels were averaged across all panelists. The mean ability level was then translated into a score via a table from the statistical analysis of the field-test results.

Panelists completed Round 1 of the bookmarking procedure after which data analysts calculate cut scores based on panelists evaluations. The standard setters on each grade level discussed the results of their Round 1 decisions and then completed a second round of rating using the difficulty-ordered booklets, employing information from the discussion with the other panelists.

After the second round of rating, based on the Round 2 mean cut scores, panelists reviewed impact data tables and graphs that showed the impact of panelists' cut scores on students. Impact data include how many students would be classified at each level based on Round 2 ratings. Before completing Round 3 final ratings, panelists were also provided with additional reference information to ensure they fully understood the impact of their ratings, such as how many students were likely to take the MAS and what the 2 percent allowance for MAS test takers to be considered proficient meant in terms of the number of test takers. In addition, the percentages of students within the proficiency categories from the standard CMT and CAPT were provided. For example, the MAS Grade 3 Mathematics Panel was given the percentages of Grade 3 students across the proficiency levels, from the 2009 CMT assessment, as a point of comparison with the MAS impact data.

Establishment of Standards for MAS

Appendix D presents the projected percentages of students expected to score at or above the Grade 3-8 and 10 MAS achievement standards, as well as the estimated raw score cut points for the Grade 3-8 and 10 MAS tests. Based on the best data that were available at the time of the standards-setting committee meetings, we are able to estimate the raw score cut points that correspond to the projected percentages. When the data file from the 2010 MAS administration is complete and accurate, we will be able to determine the exact raw score cut points. Cut scores established for the 2010 administration will be applied in all future MAS administrations within the current test generation.

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Approved by:

Barbara Q. Beaudin, Ed.D., Associate Commissioner
Division of Assessment, Research and Technology

March 3, 2010

APPENDIX A

Modifications Applied to Build the CAPT MAS Reading and Mathematics Test

General Modifications Designed to Improve Accessibility:

- Simple and brief sentence structure in items
- Consistent and clear paragraph structure
- Present tense and active voice
- Standard typeface - Verdana Expanded
- Type size standard - 12 point
- Wide spacing - 1.25 between lines
- High contrast
- Margins flush left and ragged right
- Block paragraphs
- No columns
- No background graphics behind text
- More white space on pages
- Fewer items per pages
- More liberal use of bold than standard
- Limited use of italics

Content-Specific Modifications

CAPT MAS Mathematics:

- All grid items converted to multiple-choice items
- Questions separated from the rest of the item stem
- Key information bolded in the questions
- Formulas and conversions embedded in test items
- Inclusion of graphic organizers for scaffolding of items
- Language simplified and extraneous information removed
- Some tables or graphs partially completed
- Enlarged text and graphics

CAPT MAS Reading

Response to Literature:

- Conversion of extended open-ended questions into short-answer and multiple-choice questions
- Embedded text into question stems to eliminate going back and forth between text and questions
- Enlarged text, extended spacing between paragraphs and each paragraph numbered

Reading for Information:

- Inclusion of two articles rather than three
- Conversion of short-answer response to multiple-choice questions
- Embedded text into question stems to eliminate going back and forth between text and question
- Enlarged text, extended spacing between paragraphs, each paragraph numbered
- Elimination of double-column format for the articles

Modifications Applied to Build the Reading and Mathematics CMT MAS

General Modifications Designed to Improve Accessibility:

- Simple and brief sentence structure
- Consistent and clear paragraph structure
- Present tense and active voice
- Standard typeface - Verdana Expanded
- 12- point type size
- Wide spacing - 1.25 between lines
- High contrast
- Margins flush left and ragged right
- Block paragraphs
- No columns of test questions
- No background graphics
- Increased white space
- Minimum number of questions per page
- More liberal use of bold face
- Limited use of italics

Content-Specific Modifications Designed to Improve Accessibility

CMT Reading MAS

Reading Comprehension:

- Included paragraph/sentence in stem to eliminate going back and forth between text and question
- Bold key words
- Language simplified and extraneous information removed when possible
- Added paragraph headings when possible

Degrees of Reading Power (DRP®):

- Combination passages
- Four item response choices

CMT Mathematics MAS:

- Simple numbers
- Modify diagrams to make computations and task comprehension more evident
- Most questions are multiple choice
- Include embedded formulas and measurement conversions where appropriate
- Use of dot points/spacing and organized lists/charts to facilitate readability and task comprehension
- Eliminate grid-in items
- Bold key words and numbers

APPENDIX B

Panel Members for MAS Standard Setting

Last Name	First Name	Position or Title	Years Teaching	Exp. With SWDs	Degree
Abbas Callahan	Marie L.	Special Ed Resource	35	35	Master's
Almagro	Alicia Maria	Math Teacher	11	10	Master's
Anderson	Amy M.	Mathematics Coach	15	Yes	Master's
Ardigliano	Patricia Anne	Special Ed Teacher	33	33	6th yr
Bailey Horan	Sandra	Teacher/LA 9-12	35	30	Master's
Bellefleur	Tara	Case Manager	18	18	M. Ed.
Bergeron	David	Special Ed Teacher	13	13	6th yr
Besitka	Barbara	Special Ed Teacher	33	33	6th yr
Bothamley	Heidi	HS Math Teacher	7	7	Master's
Brooks	Monica R	Special Ed Teacher	12	12	M.Ed.
Budd	Jonathan S	English Teacher	14	Yes	6th yr
Burns	Maureen	Special Ed Teacher	11	11	Bachelor's
Burns	Norine C	Special Ed Teacher	29	29	M.A.
Cabral	Laurie Maria	English/Special Ed Teacher	34	34	Master's, 6th yr
Campolo	Sharon	Special Ed Teacher	7	7	Master's
Capuciat	Jayne	Special Ed Teacher	19	20	Master's
Carolla	Kristin	Literacy Coach	11	Yes	6th yr
Cavanaugh	Nancy	Special Ed Teacher	26	26	M.A.
Collins	Susan Beth	Special Ed Teacher	24	24	Master's
Cota	Michelle K	English Teacher	14	14	Ed.M.
Crisci	Florence	Literacy Coach	16	4	6th yr
DeFrancesco	Joyce	Speech Pathologist	18	18	6th yr
Dzwil	Brenda	K-8 Math Resource	16	Adequate	6th year
Garcia	Rosalind	Math Instructional Coach	19	None	Master's
Golden	Paige	Literacy Coach	3	7	M.A.
Graveline	Michelle	Math Dept Supervisor	18	Yes	Doctorate
Gudas	Susan	Math Instructional Coach	27		M.S,
Gusy	Justin	Literacy Coordinator	7	Yes	6th yr
Harkins	Jody Lynn	Special Ed Teacher	22	22	M.S.
Hill	Elizabeth	Teacher	6	6	Master's
Holohan	Felicia D	Reading Specialist	20	10	6th yr
Kasturirangan	Lalitha	English Teacher	7	7	M.A.
Kelly	Patricia	Special Ed Teacher	15	15	M.A., M.ED.
Kennison	Corby	K-5 Math Consultant	23	23	Ed.S.
Kiniry	Pamela	LA Teacher	17	17	M.S.
Logan	Dorothy	Special Ed Teacher	23	23	Master's
Lyden	Donna R	Special Ed Teacher	34	34	Master's
MacRae	Courtney	Special Ed Teacher	4	7	Master's
Mancini	Anne Marie	Dir of Curr Instr. & Assess	10	10	6th yr
Mancuso	Leslie	K-8 Mathematics Specialist	30		Master's
Mathews	Kenneth	K-12 Math Supervisor	23	23	Ph.D.

Matz	Katherine H	Special Ed Teacher	6	3 yrs	M.A .
McCoy	Emily	Special Educator K-5	2	4 yrs	Master's
Meggie	Mary A	English Teacher	41	Little	M.S.
Mirmina	Stacy S	Special Ed Teacher	24	24	Master's
Morris	Rosanne	Special Ed Teacher	10	10	Master's, J.D.
Moura	Valerie	Language Arts Coordinator	28	28	MA
Neal	Peggy	Education Specialist	33		Master's
Negron	Margaret Irene	Special Ed Teacher	20 yrs	20 yrs	Master's
O'Brien	Carol	Special Ed Teacher	22	25	Ed.D.
Ohlmann	Karen R	Subject Area Specialist	33	33	6th yr
Palma	Susan	Education Specialist	15	7	Master's
Panciera	Elizabeth C	Teacher	24	20	M.A.T.
Pell	Tracy	Teacher	6	6	Master's
Pietrosimone	Lisa	Math Instructional Coach	14	1	M.S.
Primack	Claudia	English Teacher	27	Yes	M.S.
Reynolds	Raeanne	Literacy Coach	19	19	6th yr
Riggle Chapman	Karen	Reading Specialist	18		M.S.
Robacker	Frank	Ed Director	14	7	Master's
Rogers	Gloria	Special Ed Teacher	26	32	6th year
Rook	Tara	Special Ed Teacher	11	11	Master's
Ross	Heather Lynn	Special Ed Coordinator	10	10	B.S,
Sanchini	Linda	Teacher	30	20	Master's
Santiago	Tilda	Spec./Bilingual Ed Teacher	33	35	6th yr
Scanlon	Katherine	Resource Teacher	17	Yes	6th yr
Schleer	Lisa M	Resource Teacher	9	7	Master's
Senko	Denise	Curriculum Specialist	25	25	6th yr
Smith	Barry	7th Grade Math Teacher	37	20	6th yr
Smith	Shanta M	Math Instructional Coach	11	11	Master's
Snyder	Beth-Ann	Special Ed Teacher	12	12	Master's
Sperger	Diane	LA Coordinator - K-12		Admin	Master's
Stewart	Ellen	Special Ed Teacher	30	32	6th yr
Tamborello	Sara	English Teacher	7	7	M.A.
Taylor	Kathryn	Reading Specialist	9	2	SYD
Walsh	Gary	Instructional Math Coach	12	3	Master's
Ward	Alison	Special Education	4	Yes	Master's

APPENDIX C

Technical Advisory Committee (TAC) Members

Dr. Peter Behuniak, Professor
University of Connecticut
Measurement, Evaluation and Assessment Program
Department of Educational Psychology
NEAG School of Education

Dr. Robert Linn, Professor Emeritas
University of Colorado
Co-Director, National Center for Research on Evaluation, Standards and Student Testing and
former president of the American Educational Research Association and the National Council on
Measurement in Education

Dr. William Mehrens, Professor Emeritas
Michigan State University

Dr. Joseph Ryan, Emeritas
College of Teacher Education and Leadership
Arizona State University West

Dr. Hariharan Swaminathan, Department Chair
University of Connecticut
Measurement, Evaluation and Assessment Program
Department of Educational Psychology
NEAG School of Education

APPENDIX D

Estimated Cut Scores and Percentages at Achievement Levels

CMT MAS Mathematics

Grade	Maximum Score	Estimated Cut Scores		Percent at Each Performance Level		
		Proficient	Goal	Basic	Proficient	Goal
3	60	34	44	27	28	45
4	68	38	50	30	33	37
5	76	41	56	36	35	29
6	80	40	52	36	30	34
7	80	40	49	64	21	15
8	76	40	50	64	23	14

CMT MAS Reading

Grade	Maximum Score	Estimated Cut Scores		Percent at Each Performance Level		
		Proficient	Goal	Basic	Proficient	Goal
3	54	31	37	53	17	30
4	54	26	36	38	31	32
5	56	27	38	36	32	32
6	63	32	45	50	36	15
7	64	34	45	45	33	22
8	65	33	42	37	24	39

CAPT MAS Reading and Mathematics

Subject	Maximum Score	Estimated Cut Scores		Percent at Each Performance Level		
		Proficient	Goal	Basic	Proficient	Goal
Mathematics	36	16	21	62	22	16
Reading	36	19	24	41	24	35

Reference

Cizek, G. & Bunch, M. (2007). *Standard Setting: A Guide to Establishing and Evaluating Performance Standards on Tests*. Thousand Oaks, CA: Sage P