

Memorandum

September 17, 2013

To: Dr. Kate Carter, Superintendent of Schools

From: Daniel S. Hansen, Assistant Superintendent, Curriculum & Instruction



Subject: Summary of 2013 Results of Connecticut Mastery Test (CMT)

The following report was prepared with input and assistance from Hayley Zinn Rowthorn, Director of Literacy, Assessment and Instructional Improvement; Sharon Keegan, K-12 Math Curriculum Specialist; and Sheryl Mortensen, K-12 Science Curriculum Specialist.

Overview

The Connecticut Mastery Test assesses students on their application of skills and knowledge in the academic content areas of mathematics, reading, and writing in grades 3 through 8, and science in grades 5 and 8. March 2013 marked the eighth and final administration of the CMT Fourth Generation for mathematics, reading, and writing. The Science CMT for grades 5 and 8 will continue to be administered. The Smarter Balanced Field Test will be administered to all students grades 3-8 and 11 in the spring 2014, assessing the areas of English/language arts and mathematics.

The CMT has five student performance levels for each content area tested: Advanced, Goal, Proficient, Basic, and Below Basic. The Goal level is the state target for all students. Tables 1 and 2 provide data related to the percentage of students meeting Goal or above and Proficient or above, respectively.

Table 1: CMT Performance, by Grade, Percent At or Above Goal, in Years 2006, 2011, 2012, and 2013.

Mathematics											
Grade 3		Grade 4		Grade 5		Grade 6		Grade 7		Grade 8	
2006	63	2006	79	2006	79	2006	82	2006	83	2006	77
2011	73	2011	79	2011	92	2011	82	2011	89	2011	84
2012	79	2012	81	2012	82	2012	80	2012	82	2012	87
2013	77	2013	81	2013	88	2013	72	2013	80	2013	78
Reading											
Grade 3		Grade 4		Grade 5		Grade 6		Grade 7		Grade 8	
2006	68	2006	70	2006	77	2006	84	2006	86	2006	85
2011	69	2011	73	2011	78	2011	90	2011	94	2011	93
2012	73	2012	80	2012	81	2012	89	2012	93	2012	91
2013	74	2013	78	2013	83	2013	87	2013	91	2013	89
Writing											
Grade 3		Grade 4		Grade 5		Grade 6		Grade 7		Grade 8	
2006	64	2006	73	2006	77	2006	80	2006	77	2006	81
2011	68	2011	71	2011	76	2011	83	2011	80	2011	79
2012	73	2012	78	2012	77	2012	81	2012	80	2012	80
2013	66	2013	75	2013	75	2013	74	2013	77	2013	77
Science (* 2008 was baseline year for Science CMT)											
Grade 3		Grade 4		Grade 5		Grade 6		Grade 7		Grade 8	
2008		2008		2008*	62	2008		2008		2008*	78
2011		2011		2011	80	2011		2011		2011	80
2012		2012		2012	79	2012		2012		2012	87
2013		2013		2013	83	2013		2013		2013	74

Table 2: CMT Performance, by Grade, Percent At or Above Proficient, in Years 2006, 2011, 2012 and 2013.

Mathematics											
Grade 3		Grade 4		Grade 5		Grade 6		Grade 7		Grade 8	
2006	88	2006	89	2006	92	2006	94	2006	96	2006	94
2011	90	2011	94	2011	97	2011	94	2011	97	2011	98
2012	94	2012	94	2012	96	2012	94	2012	96	2012	97
2013	92	2013	94	2013	96	2013	95	2013	95	2013	95
Reading											
Grade 3		Grade 4		Grade 5		Grade 6		Grade 7		Grade 8	
2006	81	2006	82	2006	85	2006	91	2006	93	2006	92
2011	82	2011	87	2011	89	2011	95	2011	98	2011	98
2012	88	2012	91	2012	92	2012	94	2012	97	2012	97
2013	86	2013	89	2013	95	2013	95	2013	96	2013	95
Writing											
Grade 3		Grade 4		Grade 5		Grade 6		Grade 7		Grade 8	
2006	87	2006	92	2006	93	2006	92	2006	93	2006	96
2011	86	2011	92	2011	95	2011	96	2011	94	2011	95
2012	92	2012	91	2012	97	2012	93	2012	95	2012	96
2013	86	2013	94	2013	95	2013	94	2013	96	2013	95
Science (* 2008 was baseline year for Science CMT)											
Grade 3		Grade 4		Grade 5		Grade 6		Grade 7		Grade 8	
2008		2008		2008*	92	2008		2008		2008*	92
2011		2011		2011	96	2011		2011		2011	91
2012		2012		2012	93	2012		2012		2012	93
2013		2013		2013	94	2013		2013		2013	90

Analysis

Mathematics

The percentage of students in grades 3-5 meeting the goal standard and the proficiency standard has increased since the 2006 baseline data. Likewise, since 2006 each grade level cohort progressing from grade 3 to grade 4 to grade 5 has increased the percentage of students meeting goal or above. The Grade 3 cohort of 2011 also increased the percentage of students meeting the proficiency standard, from 90% in 2011 to 96% in 2013. This may be an indicator that our intervention efforts are having success. With regard to the 2013 data, grade 3 students at Eli Terry and Pleasant Valley were outliers with 70% meeting goal. Likewise, 70% of the grade 4 students at Eli Terry met goal whereas the other elementary schools scored 80% – 88%. The proficiency rates for our middle school students have remained strong (94% - 98%), although the percentage of students meeting the goal level has dropped. This is likely due to the changes in curriculum brought about by the Common Core State Standards (CCSS). Several mathematics topics tested on the CMT are no longer addressed in the CCSS.

Reading

The percentage of students in grades 3-8 meeting the goal standard and the proficiency standard has increased since the 2006 baseline data. Of particular note, the grade 3 cohort of 2011 increased the percentage of students at the proficiency

standard from 82% in 2011 to 95% in 2013. Again, this is one indicator that intervention efforts are assisting students in moving out of the basic and below-basic ranges.

Writing

Our 2013 district data for writing mirrors the state-wide data showing a decline in the percentage of students meeting goal at each grade level. Although a high percentage of students are achieving the proficiency level, fewer made substantive gains to reach the goal and advanced levels. The new alignment of our curriculum to the CCSS, completed throughout last year at all grade levels, has students and teachers addressing types and aspects of writing in an order that is significantly different from what the former Connecticut Framework standards required. We expect that the changes to the writing curriculum will raise the bar for students as early as kindergarten.

Science

Elementary students continue to show growth on the Science CMT. Each elementary school shows significant growth of as much as 10-29 percentage points over the past 6 years. Of particular note this year, Pleasant Valley increased the percentage of students reaching goal from 65 in 2012 to 84 in 2013. While the Grade 8 science scores are down in 2013, as they were in all content areas for this student group, teachers continue to focus on areas of weakness as identified through classroom pre-assessments.

Vertical Scales

The CMT vertical scales are designed to measure change or growth in student achievement across grades (i.e., from grade 3 to grade 4, from grade 4 to grade 5, etc.) on tests that have different characteristics and items, but have similar content. Vertical scales have been developed for the content areas of mathematics and reading (range 200 – 700).

Tables 3 and 4 compare the growth of two different cohorts (2006 and 2011) for each of the grade spans: grade 3 to grade 5, and grade 6 to grade 8, respectively.

Table 3: CMT Growth by Cohort, Grade 3 – Grade 5

Cohort Years	Cohort	Mathematics		Reading	
	Grade Levels	Vertical Scale	Growth	Vertical Scale	Growth
Cohort 2006	3	459		436	
2007	4	505	46	464	28
2008	5	533	28	489	25
Cohort 2011	3	463		440	
2012	4	514	51	477	37
2013	5	547	33	504	27

This table can be analyzed to compare how the 2006 grade 3 cohort grew over time during their elementary years with the growth of the 2011 grade 3 cohort over the same amount of time. The baseline vertical scales of the grade 3 cohort of 2011 were higher than the 2006 cohort for both mathematics and reading. The rate of growth each year for the 2011 cohort exceeded that of the 2006 cohort for both math and reading. This might suggest that the curriculum and instructional improvements in grades 4 and 5 are causing an accelerated rate of progress for our students.

Table 4: CMT Growth by Cohort, Grade 6 – Grade 8

Cohort Years	Cohort Grade Levels	Mathematics		Reading	
		Vertical Scale	Growth	Vertical Scale	Growth
Cohort 2006	6	562		517	
2007	7	583	21	531	14
2008	8	595	12	541	10
Cohort 2011	6	562		523	
2012	7	583	21	540	17
2013	8	590	7	548	8

Table 4 illustrates a similar pattern of accelerated progress for the 2011 grade 6 cohort when compared to the 2006 grade 6 cohort for reading, especially during the grade 7 year. Additionally, the 2011 cohort ended its sixth-grade year with a higher vertical scale average than the 2006 cohort in reading. Again, the data suggests that improvements to curriculum and instructional practices in reading are having a positive impact on the rate of student progress. The mathematics vertical scales for each cohort show a similar degree of growth over time.

Subgroup Performance and the Achievement Gap

The CMT data also allows us to examine how the various subgroups of students are performing compared to their peers and to what degree each subgroup is keeping pace with the “all-student” group, or district averages. Tables 5, 6, and 7 provide comparisons with regard to gender; students with disabilities and students with free/reduced price meals; and ethnicity. Tables 6 and 7 provide sample data from Grades 3, 5, and 8.

Table 5: CMT Performance 2013, Gender Comparisons, Scoring At or Above Goal

Mathematics			Science		
Grade	Females	Males	Grade	Females	Males
3	75	78	3		
4	82	81	4		
5	87	88	5	85	81
6	71	73	6		
7	75	84	7		
8	74	82	8	72	77

Reading			Writing		
Grade	Females	Males	Grade	Females	Males
3	79	70	3	75	59
4	79	76	4	84	68
5	89	77	5	80	71
6	91	84	6	88	66
7	91	92	7	83	72
8	89	89	8	83	71

Table 5 provides important comparisons with regard to the performance and progress of female and male students. Two data sets are of particular interest. In mathematics, males and females perform at similar rates until grade 7 when males outperform females by 9 percentage points. Comparisons at each grade level in writing indicate that boys are substantially underperforming females. Director of Literacy, Assessment, and Instructional Improvement Hayley Zinn Rowthorn has

developed strategies for engaging boys in writing tasks that have relevance and high interest. This has included writing tasks in response to non-fiction texts.

Table 6: CMT 2013 Subgroup Performance (Students with Disabilities; Free/Reduced Price Meals), Grades 3, 5, and 8, At or Above Goal

Students with Disabilities								
Grade	Mathematics		Reading		Writing		Science	
	<i>SPED</i>	<i>Not SPED</i>	<i>SPED</i>	<i>Not SPED</i>	<i>SPED</i>	<i>Not SPED</i>	<i>SPED</i>	<i>Not SPED</i>
3	40	80	46	77	16	72		
5	47	92	36	87	20	83	30	90
8	24	84	54	93	32	83	29	80
Free and Reduced Price Meals								
Grade	Mathematics		Reading		Writing		Science	
	<i>F/R</i>	<i>Full Price</i>	<i>F/R</i>	<i>Full Price</i>	<i>F/R</i>	<i>Full Price</i>	<i>F/R</i>	<i>Full Price</i>
3	62	78	50	77	43	68		
5	64	91	71	85	49	79	64	85
8	58	80	73	91	63	79	58	76

Table 6 illustrates significant achievement gaps between students with disabilities and their non-disabled peers as well as between students who qualify for free or reduced price meals (high poverty) and their (low poverty) peers.

Table 7: CMT 2013 Subgroup Performance by Ethnicity, Grades 3, 5, and 8, At or Above Goal

Grade	Ethnicity/Race	Mathematics	Reading	Writing	Science
3	Black or African Am	50	31	44	
	Hispanic/Latino	55	45	55	
	White	79	78	64	
	Asian	89	89	92	
5	Black or African Am	65	53	40	55
	Hispanic/Latino	68	79	59	73
	White	90	85	78	87
	Asian	94	86	90	86
8	Black or African Am	47	77	65	41
	Hispanic/Latino	77	87	61	77
	White	78	89	78	74
	Asian	95	98	95	95

Table 7 provides data comparing the subgroup performance by ethnicity where there are twenty or more students within any given subgroup. The achievement gap between the highest performing subgroups, Asian and White, and the lowest performing subgroups, Black and Hispanic, appear to close from grade 3 to 8 with the exception of mathematics and science for the Black subgroup. However, Table 7A, below, illustrates that a high majority of Black and Hispanic students are meeting the proficiency standard, particularly in grades 5 and 8. This is an indicator that suggests attention be given to strengthening the core curriculum in order to move students from Proficient to Goal and above.

Table 7A: CMT 2013 Selected Subgroup Performance by Ethnicity, Grades, 3, 5, and 8 At or Above Proficient

Grade	Ethnicity/Race	Math	Reading	Writing	Science
3	<i>Black or African Am</i>	67	63	67	
	<i>Hispanic/Latino</i>	85	75	77	
5	<i>Black or African Am</i>	88	80	85	65
	<i>Hispanic/Latino</i>	84	96	93	85
8	<i>Black or African Am</i>	88	88	94	82
	<i>Hispanic/Latino</i>	97	94	97	87

South Windsor Initiatives

The 2013 CMT student performance data gives us cause to celebrate the positive impact of intervention initiatives on our students' achievement over time. Our focus now is on strengthening our core curriculum by aligning to the Common Core State Standards. Moving forward, students' academic growth over time will be assessed by the Smarter Balanced Assessments each spring. Several initiatives outlined in South Windsor's *Strategic Plan 2011-2014* continue to support continued progress of student achievement:

- Our English/language arts and mathematics curricula are now aligned with the Common Core State Standards and will continue to be refined.
- All content areas will engage students in informational texts and writing tasks.
- South Windsor is providing a full-day kindergarten program for all kindergarten students which will greatly increase the amount of instructional time for our youngest learners.
- An early-release day professional development model is in place for elementary teachers to support them with the new CCSS curricular and instructional expectations and will provide consistency among the elementary schools.
- A new teacher and administrator evaluation and support model has been introduced that includes using multiple measures of student achievement as a substantial component of teacher and administrator evaluation.
- Staff development will be linked to student performance data and will emphasize small group, team-based initiatives.
- Our intervention support programs continue to be refined through co-teaching initiatives. This reduces the amount of time students are pulled out for intervention and provides more support in the classroom for students.
- High-quality achievement benchmarks for mathematics and literacy have replaced previous measures. Specifically the Scholastic Math Inventory, Scholastic Reading Inventory, and the Fountas and Pinnell Reading Inventory will be used to measure student progress throughout the year and across the years for every student.
- The addition of the student information system support specialist continues to show benefits in our capacity to monitor the quality of student data input and to support administrators and teachers in accessing and utilizing assessment data.

District Reference Group (DRG) Analysis

The DRG information allows for comparison of CMT results among similar communities.

Mathematics Grade 3		
Group	% Goal	% Proficient
Trumbull	86	96
Granby	86	97
Monroe	85	98
Fairfield	85	96
Madison	85	97
Guilford	83	95
Glastonbury	83	96
Avon	83	96
Orange	82	96
Simsbury	82	94
Regional Sch Dist 15	81	94
Brookfield	79	92
Woodbridge	79	94
Greenwich	78	92
South Windsor	77	92
New Fairfield	77	93
Farmington	76	93
West Hartford	73	91
Cheshire	71	90
Bethany	65	88
State	62	83

Reading Grade 3		
Group	% Goal	% Proficient
Avon	87	94
Madison	83	89
Granby	82	93
Monroe	80	90
Guilford	79	90
Fairfield	79	90
Glastonbury	77	88
Farmington	76	89
Orange	75	90
Trumbull	75	88
Greenwich	75	88
South Windsor	74	86
Brookfield	74	85
Simsbury	74	88
Regional Sch Dist 15	74	85
West Hartford	72	82
New Fairfield	68	86
Cheshire	67	81
Woodbridge	67	84
Bethany	62	78
State	57	72

Writing Grade 3		
Group	% Goal	% Proficient
Avon	87	97
Trumbull	82	93
Glastonbury	81	93
Farmington	80	93
Simsbury	80	93
Fairfield	80	92
Granby	79	94
Monroe	79	95
Woodbridge	79	90
Guilford	77	92
Greenwich	76	90
West Hartford	76	91
Orange	74	93
Madison	72	92
New Fairfield	72	87
Cheshire	71	88
Regional Sch Dist 15	71	88
South Windsor	66	86
Brookfield	66	84
Bethany	57	77
State	60	80

Grade 4 Mathematics		
Group	% Goal	% Proficient
Monroe	91	97
Trumbull	89	97
Avon	89	98
Woodbridge	88	97
Cheshire	87	95
Fairfield	87	97
Farmington	87	97
Granby	86	97
Madison	83	97
Greenwich	82	94
Orange	82	97
South Windsor	81	94
Regional Sch Dist 15	81	96
Simsbury	80	94
New Fairfield	80	95
Brookfield	79	95
Guilford	78	92
Glastonbury	78	93
West Hartford	73	89
Bethany	68	93
State	65	84

Grade 4 Reading		
Group	% Goal	% Proficient
Woodbridge	90	96
Avon	88	94
Madison	86	95
Regional Sch Dist 15	85	95
Farmington	85	95
Monroe	85	94
Simsbury	83	92
Orange	81	95
Granby	81	93
Guilford	80	90
Cheshire	80	92
Glastonbury	79	89
Fairfield	79	90
Greenwich	79	90
Trumbull	79	91
South Windsor	78	89
West Hartford	75	88
Brookfield	72	87
Bethany	72	96
New Fairfield	65	87
State	63	78

Grade 4 Writing		
Group	% Goal	% Proficient
Woodbridge	91	93
Farmington	88	98
Madison	86	97
Monroe	86	96
Regional Sch Dist 15	85	93
Simsbury	84	95
Trumbull	84	95
Avon	84	95
Greenwich	82	95
Orange	81	98
Fairfield	79	93
Glastonbury	79	91
Guilford	78	93
Cheshire	78	92
South Windsor	75	94
Granby	75	90
New Fairfield	74	89
West Hartford	74	90
Brookfield	73	91
Bethany	69	90
State	63	84

Grade 5 Mathematics		
Group	% Goal	% Proficient
Avon	92	98
Bethany	92	99
Brookfield	91	98
Cheshire	91	97
Fairfield	90	96
Farmington	89	95
Glastonbury	89	96
Granby	89	97
Greenwich	89	97
South Windsor	88	95
Guilford	88	96
Madison	88	96
Monroe	88	96
New Fairfield	87	95
Orange	86	96
Simsbury	84	96
Trumbull	82	91
West Hartford	82	92
Woodbridge	81	93
Regional Sch Dist 15	80	92
State	69	84

Grade 5 Reading		
Group	% Goal	% Proficient
Avon	91	99
Bethany	88	94
Brookfield	88	95
Cheshire	87	94
Fairfield	86	94
Farmington	86	92
Glastonbury	86	95
Granby	85	93
Greenwich	85	91
Guilford	84	92
South Windsor	83	92
Madison	83	95
Monroe	83	91
New Fairfield	83	92
Orange	82	92
Simsbury	82	90
Trumbull	81	90
West Hartford	79	89
Woodbridge	79	89
Regional Sch Dist 15	75	89
State	67	79

Grade 5 Writing		
Group	% Goal	% Proficient
Avon	90	96
Bethany	87	98
Brookfield	87	97
Cheshire	87	97
Fairfield	87	97
Farmington	86	96
Glastonbury	85	96
Granby	84	97
Greenwich	83	96
Guilford	83	96
Madison	83	97
Monroe	82	95
New Fairfield	82	95
Orange	81	95
Simsbury	81	95
Trumbull	77	94
South Windsor	75	95
West Hartford	75	95
Woodbridge	71	91
Regional Sch Dist 15	64	95
State	66	88

Mathematics Grade 6		
Group	% Goal	% Proficient
Avon	95	100
Bethany	94	100
Brookfield	92	97
Cheshire	91	98
Fairfield	90	98
Farmington	89	99
Glastonbury	87	99
Granby	87	98
Greenwich	86	96
Guilford	85	95
Madison	85	96
Monroe	84	97
New Fairfield	83	93
Orange	82	95
Simsbury	82	96
Trumbull	81	95
West Hartford	78	94
Woodbridge	77	92
South Windsor	72	94
Regional Sch Dist 15	72	95
State	67	86

Reading Grade 6		
Group	% Goal	% Proficient
Orange	97	100
Woodbridge	95	100
Granby	94	99
Avon	94	97
Farmington	93	96
Simsbury	92	97
Madison	92	96
Monroe	92	98
Guilford	91	97
Bethany	90	94
Cheshire	90	95
Glastonbury	89	96
Trumbull	88	95
South Windsor	87	95
Fairfield	86	93
Greenwich	86	94
New Fairfield	84	93
Regional Sch Dist 15	84	94
Brookfield	84	94
West Hartford	84	91
State	73	85

Writing Grade 6		
Group	% Goal	% Proficient
Avon	92	97
Orange	92	99
Simsbury	91	97
Farmington	90	95
Guilford	89	96
Madison	87	97
Woodbridge	87	96
Monroe	85	94
Glastonbury	84	97
Trumbull	83	96
Fairfield	82	94
Granby	82	95
Cheshire	81	95
West Hartford	81	92
Greenwich	80	94
Regional Sch Dist 15	80	96
South Windsor	74	94
Brookfield	73	91
New Fairfield	72	92
Bethany	68	91
State	65	84

Mathematics Grade 7		
Group	% Goal	% Proficient
Avon	94	98
Madison	92	98
Granby	91	98
Farmington	91	98
Simsbury	89	98
Regional Sch Dist 15	89	98
Fairfield	85	95
Trumbull	84	95
Glastonbury	84	96
Brookfield	83	96
South Windsor	80	95
Cheshire	80	96
Greenwich	80	92
Guilford	79	95
West Hartford	79	92
Monroe	78	94
New Fairfield	69	91
State	66	85

Reading Grade 7		
Group	% Goal	% Proficient
Simsbury	97	99
Avon	95	98
Granby	95	98
Regional Sch Dist 15	95	97
Trumbull	94	97
Glastonbury	94	99
Guilford	93	98
Cheshire	93	97
Farmington	92	97
Madison	92	96
South Windsor	91	96
Fairfield	90	95
Monroe	90	95
Brookfield	89	96
West Hartford	89	94
Greenwich	89	94
New Fairfield	81	91
State	79	87

Writing Grade 7		
Group	% Goal	% Proficient
Madison	89	94
Simsbury	87	96
Trumbull	87	95
Farmington	87	95
Avon	87	96
Glastonbury	86	95
Regional Sch Dist 15	85	94
Guilford	84	96
Brookfield	83	95
Granby	82	96
Monroe	82	94
Fairfield	80	93
South Windsor	77	96
New Fairfield	77	94
Greenwich	76	90
West Hartford	75	88
Cheshire	74	91
State	65	83

Mathematics Grade 8		
Group	% Goal	% Proficient
Avon	93	99
Guilford	92	98
Madison	90	98
Simsbury	90	98
Granby	90	99
Brookfield	89	97
Trumbull	87	97
Farmington	87	98
Glastonbury	85	97
Regional Sch Dist 15	84	97
Fairfield	84	96
Monroe	83	95
Cheshire	82	98
New Fairfield	82	94
Greenwich	81	95
South Windsor	78	95
West Hartford	68	89
State	65	86

Reading Grade 8		
Group	% Goal	% Proficient
Trumbull	95	99
Brookfield	94	97
Farmington	94	95
Simsbury	94	97
Avon	94	97
Cheshire	93	97
Guilford	92	97
Madison	92	96
Regional Sch Dist 15	91	95
Fairfield	91	95
Monroe	90	95
Glastonbury	90	95
South Windsor	89	95
Granby	86	95
Greenwich	86	93
New Fairfield	85	90
West Hartford	82	89
State	76	86

Writing Grade 8		
Group	% Goal	% Proficient
Avon	91	97
Guilford	90	98
Madison	90	97
Trumbull	88	97
Farmington	88	96
Brookfield	87	96
Monroe	86	96
Simsbury	86	95
New Fairfield	85	94
Cheshire	84	95
Glastonbury	84	95
Regional Sch Dist 15	84	95
Fairfield	84	95
Granby	78	93
South Windsor	77	95
Greenwich	76	91
West Hartford	75	89
State	67	86