

# NEWS

## Connecticut Department of Education

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Commissioner

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### **2009 CMT Results Post Gains Across Grades 3-8 in All Content Areas**

(HARTFORD, CT). Compared with 2008, Connecticut's elementary and middle school students improved their performance at the proficient and goal levels in all content areas tested and at all grade levels tested, except for Grade 3 Writing, on the 2009 Connecticut Mastery Test (CMT). The annual, state-administered CMT assesses approximately 250,000 students on their application of skills and knowledge in the core academic content areas of reading, writing and mathematics in Grades 3 through 8, and science in Grades 5 and 8.

**Table 1** compares the percentage of students scoring at or above the goal level (% Goal) and at or above the proficient level (% Prof) for each content area tested from 2006 through 2009. The first administration of the science assessment was in March 2008.

**Table 1: CMT Performance, by Year and Grade, Percent At/Above Proficient and Percent At/Above Goal**

Grade	Year	Mathematics		Reading		Writing		Science	
		% Prof	% Goal	% Prof	% Goal	% Prof	% Goal	% Prof	% Goal
3	2006	78.3	56.3	69.2	54.4	81.7	61.1		
3	2007	80.1	59.4	69.3	52.3	82.4	60.8		
3	2008	80.7	60.2	68.4	52.1	82.9	63.5		
3	2009	82.8	63.0	71.1	54.6	83.2	62.6		
4	2006	80.3	58.8	71.8	57.8	84.2	62.8		
4	2007	80.9	62.3	70.6	57.0	84.1	65.1		
4	2008	81.5	60.5	69.7	56.0	84.8	62.9		
4	2009	84.6	63.8	74.4	60.7	85.0	64.2		
5	2006	80.8	60.7	72.8	60.9	85.3	65.0		
5	2007	82.5	66.0	73.4	61.5	85.7	64.6		
5	2008	83.1	66.2	74.0	62.2	85.7	64.6	81.1	55.2
5	2009	85.9	69.0	77.7	66.0	86.5	66.6	82.9	58.3
6	2006	79.8	58.6	75.4	63.6	82.7	62.2		
6	2007	82.7	63.9	75.7	64.3	83.8	63.0		
6	2008	84.3	66.6	77.6	66.4	82.9	61.9		
6	2009	86.8	69.0	80.3	69.0	83.1	62.2		
7	2006	77.8	57.0	76.4	66.7	80.9	60.0		
7	2007	80.2	60.3	75.5	65.9	81.1	60.4		
7	2008	82.6	63.3	79.7	71.2	80.1	62.0		
7	2009	85.7	66.3	83.4	74.9	80.9	62.9		
8	2006	78.9	58.3	76.6	66.7	81.9	62.4		
8	2007	80.8	60.8	76.4	66.6	82.5	64.0		
8	2008	81.2	61.0	77.0	64.9	82.7	63.4	75.2	58.9
8	2009	84.5	64.7	80.5	68.5	83.7	66.5	76.6	60.9

This year marked the fourth administration of the Fourth Generation CMT, which was first administered in March 2006. The March 2006 administration serves as a baseline for examining changes in student performance over the course of the Fourth Generation. There are five levels of student performance: Below Basic, Basic, Proficient, Goal and Advanced. The proficient level is used to identify schools and districts that are making Adequate Yearly Progress (AYP) under the federal No Child Left Behind (NCLB) Act. The goal level is more challenging than the proficient level and is the state target for student performance. By September, parents will receive CMT score reports that provide individual performance data for their children.

*“When we look at the performance of students in these core academic disciplines from 2006 to 2009, there is a positive trend line across all six grades which is encouraging,” said Commissioner Mark K. McQuillan in announcing this year’s statewide CMT scores. “Our students are performing better each year, but challenges remain.”*

*“I am pleased to see improvements in the performance of students across the board, including somewhat larger gains by minority and economically disadvantaged students which helps to close Connecticut’s large achievement gaps. While this shows positive movement, we should all be concerned with the 30 percentage point gaps in performance among racial and economic groups that persist. We need to do more to help all children succeed.”*

### **CMT Results by Content Area**

The following summarizes CMT performance for mathematics, reading, writing and science (Grades 5 and 8), focusing on the trends in the percentages of students scoring at or above the goal and proficient levels across grades.

#### **Mathematics**

Across the grades, the CMT mathematics tests assess skills, concepts and applications in four broad areas of mathematics — Numerical and Proportional Reasoning; Algebraic Reasoning; Patterns and Functions; Geometry and Measurement; and Working with Data: Probability and Statistics.

The score progressions for the goal and proficient levels of performance for mathematics within each grade trend upward across the four years of the generation, with the 2009 percentages the highest for the four-year time period. By 2009, at least 63 percent of the students in each grade scored at or above the goal level on the mathematics portion of the CMT, while at least 82 percent of the students met or exceeded the proficient level.

#### **Reading**

For each grade assessed, the CMT reading tests contain two components: Reading Comprehension and the Degrees of Reading Power<sup>®</sup> (DRP). Reading Comprehension assesses how well students understand the content of literary and informational passages, interpret meaning, make connections to the world and elaborate on the text. The DRP is a national norm-referenced test that identifies the level of text that students are able to read.

There is considerable variability in the percentage of students scoring at or above goal across the grades in reading, with about 55 percent of the Grade 3 students meeting goal compared with about 75 percent of Grade 7 students. For the proficiency level in reading, the range was 71 percent in Grade 3 to 83 percent in Grade 7. The trends between 2006 and 2009 are positive at all grade levels, again with the 2009 cohort of students exceeding previous cohorts in the percentage of students scoring at or above goal and at or above proficient.

## **Writing**

The CMT writing tests include the Direct Assessment of Writing and Editing & Revising, at each grade. The Direct Assessment of Writing requires students to write up to a three-page first draft. Students respond to a prompt that was designed to elicit a narrative (Grades 3 and 4), expository (Grades 5 and 6), or persuasive (Grades 7 and 8) response. The Editing questions assess students' understanding of the conventions of the English language including capitalization, punctuation and usage of language and spelling, while Revising questions assess students' ability to identify errors in organization, syntax and word choice.

In 2009, across Grades 3 through 8, at least 62 percent of the students in each grade scored at or above goal on the writing portion of the CMT and at least 80 percent scored at or above the proficient level. Student performance remains relatively consistent with a modest upward trend across all grades from 2006 to 2009, except for a small decline in the percentage of Grade 3 students scoring at the goal level occurring between 2008 and 2009.

## **Science**

This was the second year that Connecticut elementary and middle school students were assessed in science. Grade 5 students took a cumulative elementary science CMT that assessed concepts and skills taught throughout the elementary grades. Students in Grade 8 were assessed on science concepts and skills taught in Grades 6 through 8. Both assessments are based on state expectations for science learning described in the 2004 *Core Science Curriculum Framework*. Students are expected to understand and explain science concepts and how they relate to the real world in the areas of earth, physical and life science. In addition, students must be able to explain how scientific inquiry is conducted. Science performance tasks, developed by the Connecticut State Department of Education for teachers' use during the school year, form the basis for some of the CMT questions that assess students' understanding of scientific inquiry.

In 2009, 58 percent of the students in Grade 5 and 61 percent of the students in Grade 8 scored at or above goal on the science portion of the CMT and approximately 83 percent of the Grade 5 students and 77 percent of the Grade 8 students scored at or above the proficient level. Scores for both grade levels increased from the 2008 administration.

## **Subgroup Performance**

**Tables 2 and 3** provide comparisons of CMT performance data for Grades 5 and 8, respectively, in the areas of mathematics, reading, writing and science by: gender, the most prevalent racial/ethnic subgroups (black, Hispanic and white), eligibility for free or reduced price-meals (poverty status), special education (SPED) status and English language learner (ELL) status. These grades were selected because they are the two grades in which CMT science is also assessed.

**Table 2: Grade 5 Subgroup Comparisons**

Subgroup	Grade	Year	Mathematics		Reading		Writing		Science	
			% Goal	% Prof	% Goal	% Prof	% Goal	% Prof	% Goal	% Prof
Male	5	2006	61.0	80.3	58.6	70.3	56.7	80.2		
	5	2007	65.9	81.7	59.0	70.9	57.1	80.7		
	5	2008	67.0	82.9	60.9	72.6	57.7	81.5	57.2	81.2
	5	2009	70.0	85.5	65.1	76.8	59.3	82.0	59.4	82.6
Female	5	2006	60.5	81.3	63.3	75.4	73.7	90.6		
	5	2007	66.2	83.3	64.0	76.1	72.6	91.0		
	5	2008	65.3	83.3	63.5	75.5	71.7	90.1	53.1	81.0
	5	2009	68.1	86.2	67.0	78.7	74.2	91.2	57.2	83.2
Black	5	2006	31.5	58.4	30.5	46.3	41.3	72.0		
	5	2007	37.9	61.9	33.1	48.6	40.6	72.6		
	5	2008	38.2	64.0	34.9	50.8	39.1	71.6	23.3	57.8
	5	2009	42.2	68.9	39.2	54.8	44.7	74.2	26.4	61.8
Hispanic	5	2006	34.1	61.1	31.6	45.8	41.3	69.0		
	5	2007	40.6	64.1	31.3	46.5	39.6	69.8		
	5	2008	41.5	65.4	34.6	48.6	38.6	69.7	25.6	59.1
	5	2009	45.2	69.7	38.1	54.0	42.3	72.6	29.3	63.5
White	5	2006	71.4	89.0	72.8	83.4	74.3	91.1		
	5	2007	76.5	90.2	73.3	83.8	74.3	91.5		
	5	2008	77.4	91.0	74.2	84.7	75.8	92.3	68.7	91.1
	5	2009	79.6	92.9	77.9	87.9	76.8	92.3	72.1	92.0
Free/Reduced-Price Meals	5	2006	34.0	61.2	31.5	46.5	40.6	70.2		
	5	2007	40.3	64.2	32.5	48.2	39.7	71.1		
	5	2008	40.8	65.3	34.2	49.0	38.2	70.2	25.4	59.0
	5	2009	45.3	70.2	38.8	55.0	43.1	72.9	29.6	63.9
Full Price Meals	5	2006	71.7	88.9	73.0	83.5	74.9	91.4		
	5	2007	76.7	90.0	73.4	83.8	74.9	91.8		
	5	2008	78.0	91.4	75.3	85.7	76.9	93.0	69.1	91.4
	5	2009	79.9	93.0	78.4	88.1	77.8	93.0	72.1	92.0
SPED	5	2006	21.3	41.8	19.9	29.9	22.3	47.7		
	5	2007	24.6	45.0	19.5	31.1	20.7	48.0		
	5	2008	24.9	44.9	20.1	30.7	22.4	49.3	23.0	50.2
	5	2009	34.5	60.1	30.6	44.3	21.5	49.4	24.3	53.8
Non-SPED	5	2006	66.2	86.3	66.6	78.7	70.8	90.4		
	5	2007	71.5	87.4	67.0	79.0	70.4	90.7		
	5	2008	71.5	88.0	67.6	79.6	70.0	90.4	59.4	85.1
	5	2009	72.3	88.4	69.0	80.5	72.4	91.3	62.8	86.7
ELL	5	2006	25.6	51.3	15.9	28.0	27.3	56.8		
	5	2007	24.9	48.7	10.6	23.1	21.4	53.5		
	5	2008	23.7	48.5	11.1	21.7	18.6	52.6	9.9	37.9
	5	2009	27.1	51.6	11.9	24.1	22.0	55.2	11.9	42.6
Non-ELL	5	2006	62.4	82.3	63.1	74.9	66.8	86.7		
	5	2007	68.1	84.2	64.0	75.9	66.8	87.4		
	5	2008	68.4	84.9	64.9	76.8	67.0	87.5	57.6	83.4
	5	2009	71.0	87.5	68.5	80.2	68.7	88.0	60.6	84.9

**Table 3: Grade 8 Subgroup Comparisons**

Subgroup	Grade	Year	Mathematics		Reading		Writing		Science	
			% Goal	% Prof	% Goal	% Prof	% Goal	% Prof	% Goal	% Prof
Male	8	2006	58.6	78.3	64.1	74.0	54.5	76.3		
	8	2007	61.2	80.5	63.9	74.1	57.1	77.5		
	8	2008	60.5	80.2	61.8	74.2	55.8	77.3	58.3	74.3
	8	2009	64.4	83.9	65.9	78.2	58.4	77.9	59.9	74.8
Female	8	2006	58.0	79.5	69.5	79.4	70.7	87.8		
	8	2007	60.4	81.1	69.4	78.8	71.2	87.8		
	8	2008	61.6	82.2	68.1	79.9	71.4	88.3	59.4	76.2
	8	2009	65.0	85.2	71.1	82.9	75.0	89.8	61.8	78.4
Black	8	2006	24.6	52.7	38.2	52.8	37.0	65.8		
	8	2007	27.7	56.9	38.3	53.0	36.4	65.0		
	8	2008	28.3	57.6	36.1	53.7	35.3	65.2	24.8	45.7
	8	2009	32.2	64.1	40.3	59.6	40.6	68.9	26.4	48.0
Hispanic	8	2006	25.9	53.7	36.2	50.4	34.3	62.0		
	8	2007	29.7	56.9	37.3	49.9	34.5	61.7		
	8	2008	30.5	59.1	34.4	50.4	35.4	62.8	25.9	46.5
	8	2009	33.6	63.2	38.3	55.1	40.0	65.3	27.9	48.4
White	8	2006	71.1	88.9	78.5	86.6	72.9	89.0		
	8	2007	73.4	90.4	78.2	86.4	75.4	90.2		
	8	2008	73.8	90.6	77.0	87.2	74.6	90.4	72.8	87.3
	8	2009	77.2	92.9	80.1	89.9	77.2	90.6	74.9	88.4
Free/Reduced-Price Meals	8	2006	26.5	54.8	37.6	51.8	35.3	63.5		
	8	2007	30.3	58.6	38.2	51.9	36.1	63.9		
	8	2008	29.9	58.3	35.0	51.7	34.3	63.0	25.9	46.3
	8	2009	33.7	64.6	39.8	57.6	40.6	66.9	28.9	49.6
Full Price Meals	8	2006	70.2	87.9	77.6	85.9	72.5	88.8		
	8	2007	72.3	89.2	77.3	85.7	74.5	89.6		
	8	2008	73.7	90.6	77.0	87.3	75.2	90.7	72.4	87.1
	8	2009	77.2	92.6	80.0	89.7	77.3	90.7	74.2	87.8
SPED	8	2006	17.3	37.8	24.4	35.0	18.8	41.6		
	8	2007	19.5	39.8	23.3	33.9	20.5	41.9		
	8	2008	18.5	40.2	21.2	34.6	19.2	42.5	21.5	38.8
	8	2009	26.4	53.7	29.5	47.6	21.2	43.3	23.3	39.0
Non-SPED	8	2006	63.7	84.2	72.2	82.0	68.0	87.1		
	8	2007	65.9	85.9	72.0	81.7	69.4	87.6		
	8	2008	66.5	86.5	70.4	82.4	69.0	87.8	63.7	79.9
	8	2009	68.4	87.5	72.1	83.5	72.2	88.8	65.6	81.3
ELL	8	2006	16.4	40.2	14.7	24.3	16.8	41.3		
	8	2007	12.7	34.6	8.8	17.6	12.7	33.6		
	8	2008	11.0	34.4	6.9	18.5	11.4	35.6	5.0	18.7
	8	2009	10.5	35.5	7.1	19.3	13.4	38.7	4.8	16.8
Non-ELL	8	2006	59.8	80.3	68.6	78.5	64.0	83.3		
	8	2007	62.4	82.4	68.5	78.4	65.7	84.1		
	8	2008	62.9	82.9	67.0	79.1	65.3	84.4	60.9	77.3
	8	2009	66.6	86.3	70.6	82.7	68.4	85.4	63.0	78.8

Subgroup highlights are summarized below:

### **Gender**

- In Grades 5 and 8, the percentage of males and females scoring in the proficient and goal ranges is more similar for mathematics, reading and science, than for writing, where consistently larger proportions of females than males score at both the proficient and goal levels. The largest discrepancy is in Grade 8 at the proficient level, where there is about a 12 percentage point difference in writing performance.
- The trend in performance for both males and females has been positive in mathematics, reading and writing since 2006. The wide gap in writing performance has remained fairly constant.

### **Race/Ethnicity**

- In both grades substantially larger percentages of white students, compared with black and Hispanic students, continue to perform at the proficient and goal levels in each of the four content areas.
- The increase in the percentage of black and Hispanic students scoring at the proficient or goal levels between 2006 and 2009 in mathematics, reading and writing, and for science between 2008 and 2009, is greater than or equal to that of white students. This indicates that while there is a positive trend in performance for all three subgroups, the gap between white students and their black and Hispanic peers is beginning to close. The most notable changes are in mathematics at the proficient and goal levels for both grades, where the average increase was about ten percentage points for black and Hispanic students compared with five percentage points for white students.

### **Eligibility for Free/Reduced-Price Meals**

Eligibility for free/reduced-price meals is a proxy for economic need or poverty. The data on the performance of Grade 5 and 8 students who are eligible for free or reduced-price meals, compared with those who pay full price, are similar to the performance of black and Hispanic students compared with white students.

- For all four content areas in both grades, larger percentages of students who are not eligible for free/reduced price meals scored at or above the proficient and goal levels than students who were eligible.
- Over the Fourth Generation of the CMT, the trend in performance is positive for both subgroups in all four content areas. The eligible subgroup generally outpaced the non-eligible subgroup in the increase in percentage of students scoring at the proficient or goal levels, suggesting progress in closing the achievement gap between economically disadvantaged students and their more affluent peers.

### **Special Education**

Approximately 5,000 students per grade (about 12 percent of the total population) receive special education services, most of whom take the standard grade-level CMT, with or without accommodations. Over the course of the Fourth Generation CMT, a small number of the most significantly cognitively-disabled special education students, about nine percent of the special education students per grade, were administered an alternate assessment, the Skills Checklist. The students who were assessed with the Skills Checklist have not been included in the CMT reporting for any of the four years, but are reported separately on the state's website. This year about 30 percent of the special education students, who previously had taken the CMT, were administered a pilot MAS in mathematics and/or reading, along with the grade-level CMT writing and science assessments. The students who took the MAS pilot this year are not included

in the CMT reporting for mathematics and/or reading, but are included in the results for writing and science.

- Across the grades, smaller percentages of special education students who took the grade-level CMT scored at or above goal and at or above proficient on all the tested content areas of the CMT than their non-special education peers.
- The trends in writing and science for special education students are flat to slightly positive, while the trends for non-special education students are more positive, indicating little or no change in the achievement gap. The trends in special education student performance in mathematics and reading have been generally flat or slightly positive over the previous three years (2006 – 08), and somewhat parallel to the performance of non-special education students. The MAS pilot impacted this year’s standard CMT results by inflating the percentages for the standard grade-level CMT because the lowest performing special education students were not included. After the 2010 CMT administration, the impact of the CMT MAS on the performance of special education students will become more clear.

### **English Language Learners**

About 2,500 students per grade are identified as English language learners (ELL). These are students for whom English is not their primary language, and who receive services to develop their English proficiency so they can be successful academically. Under NCLB, ELL students who have been in a U.S. school for 12 months or less are exempt from the reading and writing tests but must take the mathematics and science sections of the CMT.

- ELL students performed substantially lower than their non-ELL peers in all content areas in each grade; this is the state’s lowest performing subgroup when comparing the percentage of students scoring at the proficient and goal levels.
- Over the Fourth Generation of the CMT, the trend line in performance for each of the four content areas tested is positive for non-ELL and similar to that for students who are not economically disadvantaged. For ELL students in Grade 5, there has been an increase in the percentages of students scoring in the proficient and goal levels in mathematics since 2006, and in science since 2008. For Grade 8 there were no increases in the percentage of students scoring at the goal level when comparing 2009 to the baseline from 2006, but small increases in mathematics, reading and writing when comparing this year’s result to last year.

Additional detailed information on subgroup performance is available on the CMT and CAPT online reports website.

Sample items from the CMT for each content area and examples of student responses are available in the CMT Handbooks located on the CSDE website ([www.ct.gov/sde](http://www.ct.gov/sde)).

***“The CMT is an important resource for Connecticut’s public schools. The information we obtain about student performance can help educators to adjust not only what they teach but how they teach our children to assure that they acquire the skills and knowledge they need to succeed in the world. I encourage teachers and parents to make CMT scores central to their conferences and to continue that discussion throughout the school year, in fact over several years,” said Commissioner McQuillan.***

## Vertical Scale and Achievement Growth Results 2006-2009

In 2008, the CSDE released a vertical scale for mathematics and reading for the Fourth Generation CMT. The vertical scale permits districts and schools to measure changes in student performance (growth) within each content area as they progress from Grades 3 through 8. It is designed to complement the annual status measure, the percentage of students scoring at each performance level (Below Basic, Basic, Proficient, Goal or Advanced) during each year. The vertical scales provide information on matched cohorts of students who took the CMT for two or more years. The scales for reading and mathematics range from 200 to 700 across Grades 3 through 8.

**Table 4** provides information about statewide vertical scale performance in mathematics and reading over a three-year period of time for two matched cohorts of students. The average scale score is provided for the *last grade in each grade span*. The growth score is the difference between the average scale score in the first and last years of each grade span. For example, for students who were in Grade 3 in 2006 and in Grade 5 in 2008, the average vertical scale score in mathematics was 523 in 2008; they grew an average of 72 points between Grade 3 in 2006 and Grade 5 in 2008. The 2007-09 cohort for Grades 3 through 5, in comparison, had an average vertical scale score of 527 and growth of 71 vertical scale points between Grade 3 in 2007 and Grade 5 in 2009.

**Table 4: Statewide Vertical Scale Results**

		Grade Span									
		Grades 3 - 5		Grades 4 - 6		Grades 5 - 7		Grades 6 - 8			
Content Area	Average Vertical Scale Score	Growth		Average Vertical Scale Score	Growth		Average Vertical Scale Score	Growth			
	Grade 5	Grade 5	Growth	Grade 6	Grade 6	Growth	Grade 7	Grade 7	Growth		
Mathematics											
2006 - 08	523	72		545	56		561	45		572	38
2007 - 09	527	71		548	54		565	41		577	33
Reading											
2006 - 08	478	53		498	44		515	38		518	26
2007 - 09	482	54		501	45		520	40		522	27

When comparing the two cohorts of students in mathematics, the 2007-09 cohort had higher average vertical scale scores for each grade span than the 2006-08 cohort, but less growth over the three-year time frame. For reading, the 2007-09 cohort had higher average vertical scale scores and greater growth than the 2006-08 cohort for each set of grade spans. Districts and schools can use their vertical scale results to compare growth in performance of groups of students over a two-year or three-year period of time.

The following link provides more information of the development and use of CMT vertical scales: [http://www.csde.state.ct.us/public/cedar/assessment/cmt/cmt\\_vsr.htm](http://www.csde.state.ct.us/public/cedar/assessment/cmt/cmt_vsr.htm).

## **Guidance for Proper Data Analysis**

When it comes to analyzing CMT data, there are proper methods as well as improper methods. Conducting an improper analysis will lead to conclusions which are not necessarily supported by the data. Therefore, the CSDE provides guidance for proper data analysis of the statewide testing data in the document “Data Analysis Guide” which is available on the CSDE website under the Student Assessment Link.