

# **2014 CMT/CAPT Science Data Analysis 2014-2015 Science Strategic Areas of Growth**

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## March 2014 CMT SCIENCE

Grade	Science		
	Met Goal	Met Proficiency	Advanced
5	75 (2014) 76 (2013)	92 (2014) 95 (2013)	25 (2014) 31 (2013)
8	89 (2014) 80 (2013)	97 (2014) 93 (2013)	44 (2014) 26 (2013)

## Town Comparison

### Avon, Simsbury, Regional School District #10, Farmington, Granby, Canton

	Science	
	Goal	out of 6
Grade 5	75	5 <sup>th</sup>
Grade 8	89	4 <sup>th</sup>

# 5<sup>th</sup> Grade Strengths

- 75% of students scored at Goal and Advanced
- 92% of students scored at/above Proficient
- 25% of students scored at the Advanced Band
- Life Science overall was the highest average score. Science Inquiry, Literacy and Numeracy was the next highest average. There was a 2% variation between Physical, Earth and Content Knowledge.
- There was no statistically significant difference in achievement for males/females (within 3 point average)

# 5<sup>th</sup> Grade Growth Areas

- Roughly 10% (16/154) of our overall population receives Special Education support. The average score for this population was 2.8. The average score for the non-Special Education students is 4. The team plans to develop a watch list of struggling science learners and personalize a plan in consort with the Special Education Department.

# 8<sup>th</sup> Grade Strengths

- 89% of all students scored in the Goal or Advanced bands.
- 44.1% of our students scored Advanced. (Avon 38.3; Simsbury 44.0)
- Content Knowledge overall was the highest average score at 87% (26.2/30)... this is a multiple choice format. There was only a 3% variation between the average scores between Physical, Earth & Life Science

# 8<sup>th</sup> Grade Growth Areas

- Roughly 10% of our overall population is Special Education (13/136) and the average score was 3.4, as compared to non- Special Education with an average score of 4.3. The science department plans to develop a watch list of struggling science learners and personalize a plan in consort with the Special Education Department.

# CAPT Results

	Science		
	GOAL	PROF	ADV
2014	66	92	42
2013	83	98	43
2012	70	94	41
2011	70	98	37
2010	79	98	52
2009	71	93	37
2008	76	96	36
2007	59	91	34

## Town Comparison

### Avon, Simsbury, Regional School District #10, Farmington, Granby, Canton

	Science	
	Goal	out of 6
Grade 10	66	6 <sup>th</sup>

# 10<sup>th</sup> Grade Strengths

- Students scoring in the Advanced band is at 42%.
- 96% of Honors level Chemistry & Biology students scored in the Advanced or Goal bands.
- There is no significant discrepancy between the strands of science (Energy Transformations, Chemical Properties; Global Interdependence; Cell Chemistry; Genetics/Evolution) or the dimensions of science (Content Knowledge vs. Inquiry/Literacy/Numeracy).

# 10<sup>th</sup> Grade Growth Areas

- Special Education students comprise 15% of overall population in 10<sup>th</sup> grade (15/103) and the average score was 2.5, as compared to non- Special Education with an average score of 4.2. We need to work closely with the Special Education Department and support staff to implement a personalized plan that will improve the success rate.
- Our Academic Biology 10<sup>th</sup> graders had some great successes, but for others they only scored in the proficient range. Currently we do a CAPT diagnostic pre-test in January. We plan to move that to Sept., examine the current classes' data and develop targeted inclusion of key concepts in a weekly format.

# Next Generation of Science Standards

<http://www.bing.com/videos/search?q=Ngss+Introduction&FORM=RESTAB&adlt=strict#view=detail&mid=97B8EF3606E69B58449697B8EF3606E69B584496>

# Canton Public Schools Science Strategic Areas

2014-2015

# Canton Public Schools

## Science Strategic Areas 2014-2015

### Strategic Area #1: K-12 Canton Science Committee

- In May the first K-12 meeting began to examine our vision for the future of science instruction in Canton. That discussion focused on the nature of inquiry, the importance of science at the younger levels & rethinking assessments in science.
- Plan to continue our examination of the National Research Council's Framework for K-12 Science Education to develop a cohesive K-12 approach to science curriculum with an understanding of the vision behind the NGSS (Next Generation Science Standards) being considered at the state level.
- Marsha Jorgensen is serving on the CSDE Science Advisory Council that will make recommendations to the state for adoption or adaption of the standards in Connecticut this year.

# Canton Public Schools

## Science Strategic Areas 2014-2015

### Strategic Area #2: Expansion of Course Offerings/Opportunities at the Secondary Level

- Consider compacting Anatomy & Physiology into a semester course to provide another course offering.
- Examine adding AP Environmental Science.
- Develop an Applied Physics- Astronomy course at the HS level.

# Canton Public Schools

## Science Strategic Areas 2014-2015

### **Strategic Area #3: Science Community Partnership Development**

- Starting the process of initial contact with local and regional STEM companies/businesses in the area to create a database of contact information, shadowing opportunities, internship opportunities, grant funding, and professional specialty resources that promote opportunities in the real world for our students.

# Canton Public Schools

## Science Strategic Areas 2014-2015

**Strategic Area #4: Robotics Program: currently for grades 1-6. Expanding to include grades 7-8 and possibly high school.**

- Began at CIS in 2008-2009 school year
- Expanded to CBPS for 2013-2014 school year
- Expanding to CMS for 2014-2015 school year
- Students develop skills in computer programming, inventing, engineering
- They apply skills from science, technology and math
- Develop 21<sup>st</sup> Century Skills – critical thinking and problem solving, creativity and innovation, communication and collaboration, scientific and numeracy literacy, social skills.
- Opportunities to collaborate and compete against students in other school districts and schools

# Canton Public Schools

## Science Strategic Areas 2014-2015

### Strategic Area #5: Girls in Science

- Increase the participation in current science programs by girls
- Provide opportunities for girls to job shadow or be mentored by female scientists in the community
- Create and develop programs and clubs of interest for girls
- Research has shown that although female's achievement in science classes is usually stronger than males, females have a more negative attitude toward science, especially as their grade level increases.

# Canton Public Schools

## Science Strategic Areas 2014-2015

### Strategic Area #6: Science Inquiry throughout the curriculum

- Increase the opportunities for inquiry based science learning at all grade levels
- Develop and utilize a common rubric for inquiry based science activities and lab reports (K-12)
- Develop and utilize integrated literacy, science and inquiry units (Grade 2 Columbia Reading and Writing unit incorporates inquiry based science and math)
- Expand literacy instruction using science (non-fiction reading and writing to align with CCSS)

# Canton Public Schools

## Science Strategic Areas 2014-2015

### Strategic Area #7: STEM Academy

- Create proposal for Board of Education approval for a Pilot STEM Academy for Middle School Students for the 2015-2016 school year