



Lynn Public Schools Partners with Gelfand Family Charitable Trust and KnowAtom to Focus on What Matters: REAL STEM in CLASSROOMS, REAL RESULTS for STUDENTS

The Gelfand Family Charitable Trust (GFCT) focuses on promoting STEM education through innovative hands-on programs that put students in touch with tools and ideas that allow them to build, experiment, and prototype their way to a new understanding of a world they have the power to shape. With the shared goal of transforming STEM education in the classroom and beyond through hands-on laboratory learning experiences, GFCT and KnowAtom are natural partners. This partnership is most visible in our work together in Lynn Public Schools.

Lynn, Massachusetts is a Gateway City with a population of 91,000 residents. Lynn's unique proximity to industry, public transportation, and social services has made it a choice relocation center for the United Nations High Commission for Refugees from countries affected by war and famine. Lynn Public Schools educates 14,000 students in grades K-12 each year. According to the Massachusetts Department of Elementary and Secondary Education, historically one in five Lynn students have limited English proficiency, while 83 percent are low income and 86 percent are considered high needs. For students struggling with poverty, language, and a new country, the role of education is as vital as it is challenging.

Through a partnership with the Gelfand Family Charitable Trust, Lynn Public Schools saw the opportunity to bridge the many challenges with KnowAtom's hands-on approach to science and engineering. KnowAtom re-engineers the way students experience science in the

classroom, making learning a fun, empowering process that encourages students to see themselves as scientists and engineers. Using dialogue to foster fundamental critical thinking skills and systems thinking, along with hands-on labs that spark interest with activities that use science and engineering lab equipment, KnowAtom gets students actively involved in their own education. Students feel ownership over the material, which challenges them to actively participate by observing, questioning, experimenting, and prototyping. Students see the relevance of science through real stories as they make connections among lessons, experiments, and real life. They gain the confidence to apply STEM engineering to real-world situations both in the classroom and beyond.

The opportunity to engage all students to see, feel, and create with STEM in their own classroom has proven to transcend language, leveraging children's natural curiosity and providing students with opportunities to experiment. Furthermore, the highly engaging nature of STEM has led to new conversations and excitement about words and ideas not often associated with the elementary or middle school classroom, including civil engineering, biodiversity, materials science, and energy systems. In addition to student engagement, the most recent results indicate a positive trend across the district, with student proficiency gains ranging from 9 to 33 points each year.

The Gelfand Family Charitable Trust provided generous philanthropic support to match the support and continue the efforts of GE Volunteers, the Lynn Business Education Foundation, and Footprint Energy to ensure success in STEM education with KnowAtom for Lynn's Marshall Middle School, as well as the experimental STEM Lab at Tracy Elementary. In partnership with Lynn Public Schools, the Gelfand Family Charitable Trust has helped establish a

legacy of future leaders trained to think critically and equipped with an applied understanding of science, technology, engineering and math.

Along with its partners, the Gelfand Family Charitable Trust's work with elementary schools in Lynn was recognized by Jeffery Immelt, CEO of GE, in a 2013 Educational Impact Award given to the GE Volunteers Council of GE Aviation Lynn, a partner with GFCT. This award was one of three given globally and the only U.S.-based program recognized. The award recognizes GE Volunteers who coordinate, seed, and nurture programs that create a "sustainable educational impact." The global recognition and student achievement demonstrate that implementing real STEM in education creates measurable improvements and lasting opportunities.

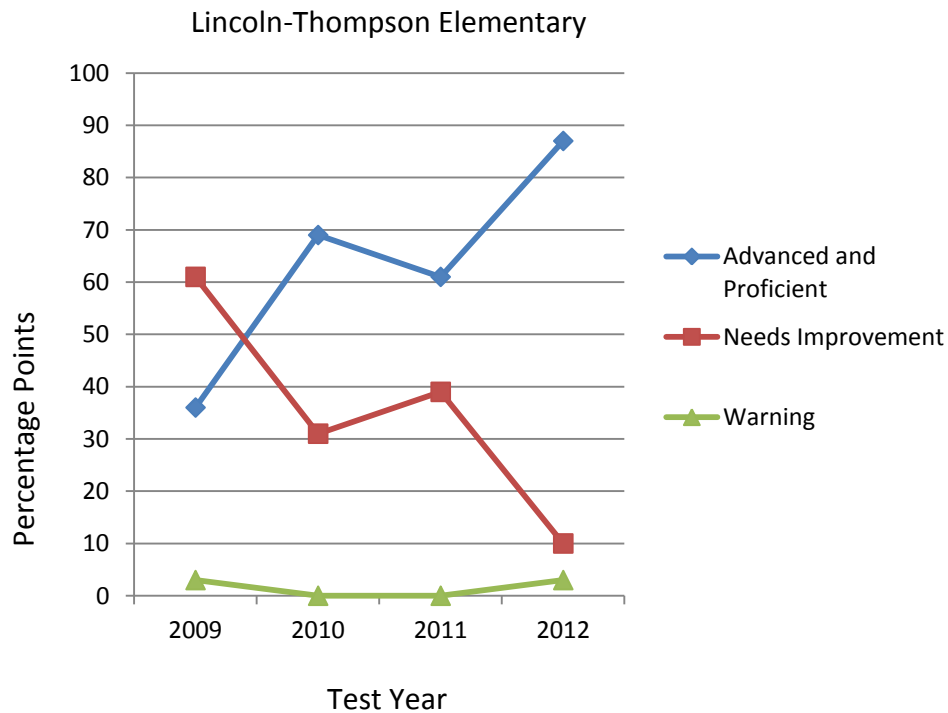
KnowAtom Gets Results

Sample of Lynn Elementary School Results

Lincoln-Thompson Elementary School, Lynn, MA

Lincoln-Thompson Elementary School in Lynn, Massachusetts, began using KnowAtom in 2010, and it has seen remarkable improvement in its MCAS scores. In just three years, Lincoln-Thompson, an urban elementary school, has improved proficiency by more than 50 points and is now ranked 28th in the state of Massachusetts out of 873 elementary schools, up from 603rd. According to Massachusetts Department of Elementary and Secondary Education data from the 2012 MCAS (the most recent data available), Lincoln-Thompson saw a 31-point increase in the number of students scoring in the “advanced” category, resulting in 87 percent of the students now achieving the “advanced” and “proficient” categories. In the same timeframe, the state of Massachusetts had just 52 percent of its students achieve the “advanced” and “proficient” categories.

“We went from 36 percent in the advanced and proficient category in MCAS scores in 2009 without KnowAtom to 87 percent in the advanced and proficient category in MCAS scores in 2012,” said Helen Mihos, Lincoln-Thompson’s principal. “That’s a dramatic impact.”



Lincoln-Thompson Elementary School: Grade 5 - SCIENCE AND TECH/ENG*				
PERFORMANCE LEVEL	2009	2010	2011	2012
ADVANCED	8	28	11	42
PROFICIENT	28	41	50	45
NEEDS IMPROVEMENT	61	31	39	10
WARNING	3	0	0	3

↑ began using KnowAtom in 2010

Lincoln-Thompson Elementary School

Category	% of School	% of State
First Language not English	34.5	17.3
Limited English Proficient	9.1	7.7
Low-income	71.6	37.0
Special Education	6.5	17.0
Free Lunch	64.4	32.1
Reduced Lunch	7.3	4.9
High Needs	75.3	47.9

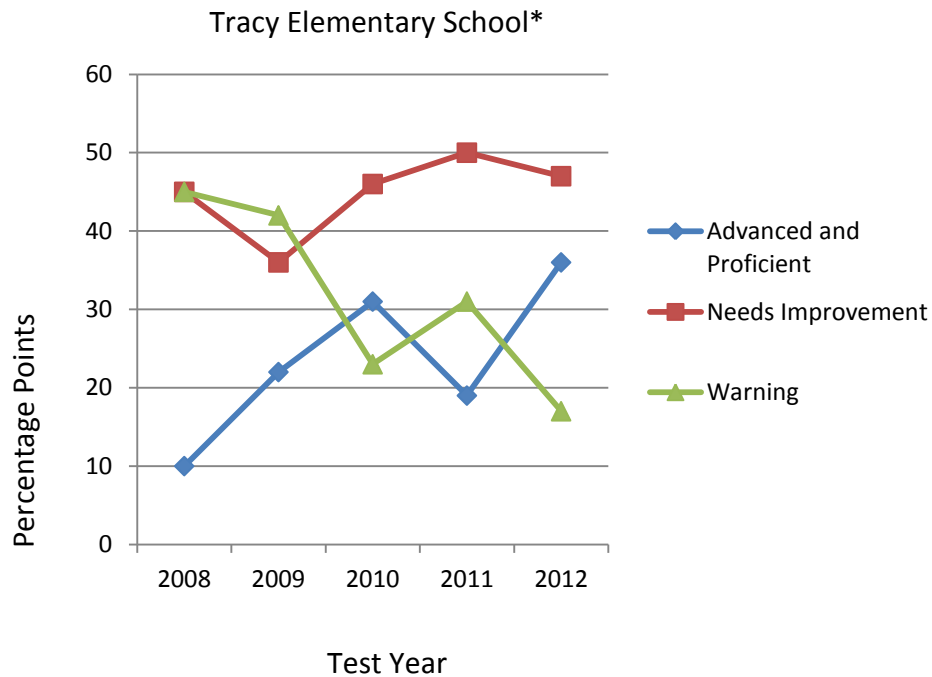
* Data Source: Massachusetts Department of Elementary and Secondary Education

Tracy Elementary School, Lynn, MA

Tracy Elementary School in Lynn, Massachusetts, partnered with district leadership, GE Volunteers Foundation, and KnowAtom to improve its STEM curriculum in 2006, after just 10 percent of their students reached proficiency on the science and technology/engineering MCAS, and 45 percent of students fell to the “warning” category.

Tracy implemented KnowAtom curriculum, and when students were tested in fifth grade, scores increased by 12 percentage points. The following year, Tracy saw an additional 9-percentage-point increase in proficiency, while the number of students scoring in the “warning” category fell by 22 percentage points.

According to Massachusetts Department of Elementary and Secondary Education data from the 2012 MCAS (the most recent data available), Tracy saw an overall proficiency gain of 17 percentage points. The number of students achieving the “advanced” category increased by 6 points, while the number of students achieving the “proficient” category increased by 11 points. The number of students scoring in the “warning” category continues to fall and is currently at an all-time low.



Tracy Elementary School: Grade 5 SCIENCE AND TECH/ENG*					
PERFORMANCE LEVEL	2008	2009	2010	2011	2012
ADVANCED	0	0	5	0	6
PROFICIENT	10	22	26	19	30
NEEDS IMPROVEMENT	45	36	46	50	47
WARNING	45	42	23	31	17

↑ began using KnowAtom in 2009

Tracy Elementary School Demographics*

Title	% of School	% of State
First Language not English	66.2	17.3
Limited English Proficient	33.8	7.7
Low-income	92.8	37.0
Special Education	3.9	17.0
Free Lunch	85.2	32.1
Reduced Lunch	7.6	4.9
High Needs	95.6	47.9

* Data Source: Massachusetts Department of Elementary and Secondary Education

Sample results from non-Lynn elementary schools that use KnowAtom

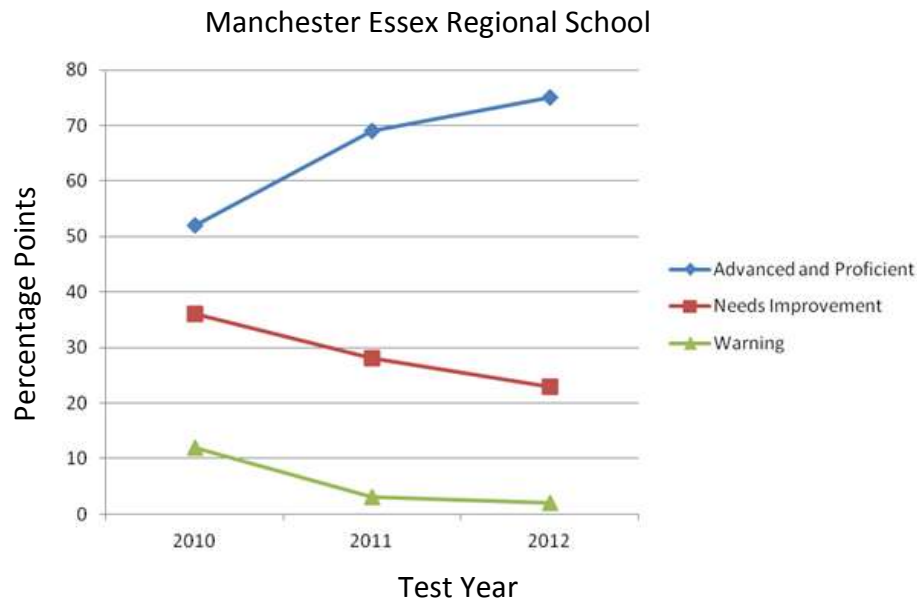
Manchester Essex Regional School District

Manchester Essex Regional School District (MERSD) began using KnowAtom in 2010 to improve the district’s STEM curriculum. In just seven months, MERSD saw a 17-percentage-point increase on standardized MCAS testing. The percentage of students scoring in the “warning” category decreased by 9 percentage points. Overall, the district moved up 137 places, from 202nd to 65th, in the STEM ranking of all 309 Massachusetts districts.

MERSD administrators cited KnowAtom’s approach of making scientific inquiry and engineering design a core part of all classroom activities as setting the curriculum apart from other STEM material. They also appreciate the fact that the concepts and topics build off of one another.

“The rigorous content, consistent integration of scientific inquiry and engineering design, and the spiraling curriculum combine to make KnowAtom the leader in 21st century STEM programming,” Scott Morrison, MERSD’s curriculum director, said.

MERSD is a suburban district with two elementary schools, Manchester Elementary School and Essex Elementary School.



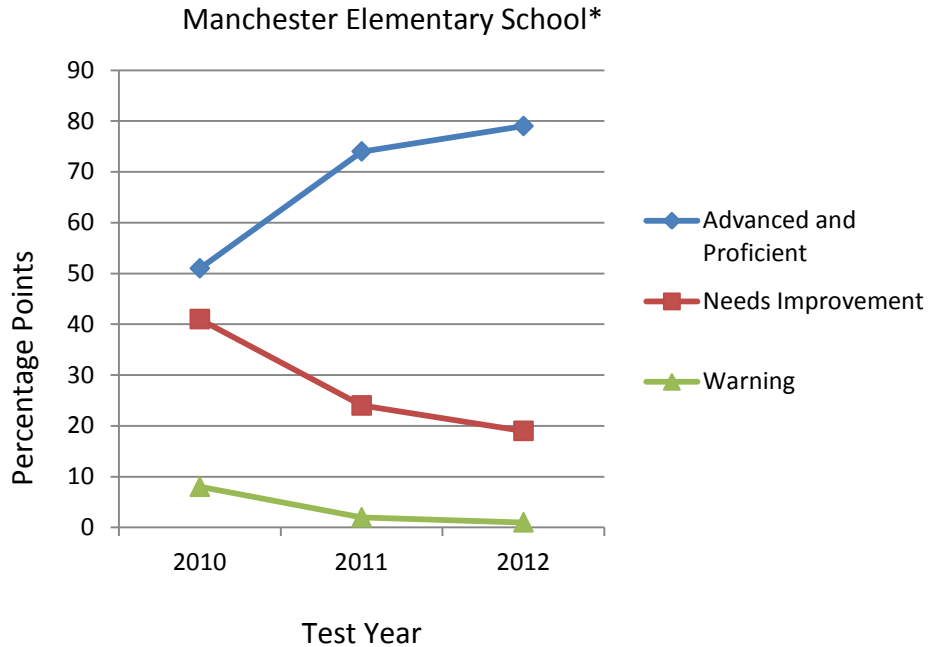
Manchester Essex Regional School District: Grade 5 - SCIENCE AND TECH/ENG*			
PERFORMANCE LEVEL	2010	2011	2012
ADVANCED	14	14	35
PROFICIENT	38	55	40
NEEDS IMPROVEMENT	36	28	23
WARNING	12	3	2

↑ began using KnowAtom in 2011

Manchester Essex Regional School District

Title	% of District	% of State
First Language not English	1.2	17.3
Limited English Proficient	0.8	7.7
Low-income	8.5	37.0
Special Education	14.8	17.0
Free Lunch	5.8	32.1
Reduced Lunch	2.8	4.9
High Needs	22.0	47.9

According to Massachusetts Department of Elementary and Secondary Education data from the 2012 MCAS (the most recent data available), Manchester Elementary School in Manchester, Massachusetts, saw a 29-point increase in the number of students achieving the “advanced” category, with a single-year proficiency gain of 5 percentage points.



Manchester Elementary School: Grade 5 - SCIENCE AND TECH/ENG*			
PERFORMANCE LEVEL	2010	2011	2012
ADVANCED	13	16	45
PROFICIENT	38	58	34
NEEDS IMPROVEMENT	41	24	19
WARNING	8	2	1

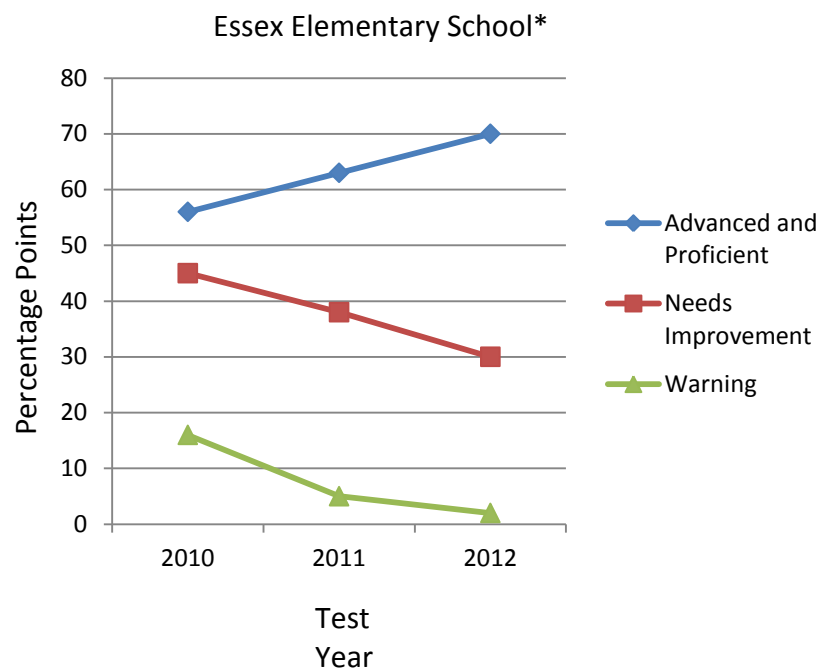
↑ began using KnowAtom in 2011

Manchester Elementary School

Title	% of School	% of State
First Language not English	1.3	17.3
Limited English Proficient	1.1	7.7

Low-income	6.9	37.0
Special Education	13.3	17.0
Free Lunch	5.4	32.1
Reduced Lunch	1.5	4.9
High Needs	19.8	47.9

In the same timeframe, Essex Elementary School in Essex, Massachusetts, saw a 9-point increase in the number of students in the “advanced” category, with a single-year aggregate gain of 7 percentage points.



Essex Elementary School: Grade 5 - SCIENCE AND TECH/ENG*			
PERFORMANCE LEVEL	2010	2011	2012
ADVANCED	16	12	21
PROFICIENT	40	51	49
NEEDS IMPROVEMENT	29	33	28
WARNING	16	5	2

↑ began using KnowAtom in 2011

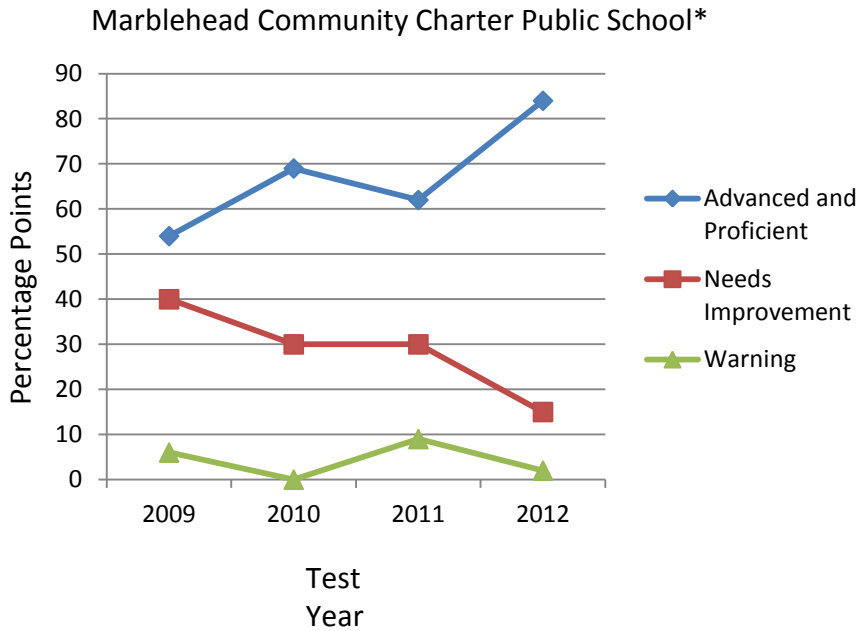
Essex Elementary School Demographics*

Title	% of School	% of State
First Language not English	1.8	17.3
Limited English Proficient	1.5	7.7
Low-income	11.0	37.0
Special Education	14.0	17.0
Free Lunch	8.8	32.1
Reduced Lunch	2.2	4.9
High Needs	23.2	47.9

* Data Source: Massachusetts Department of Elementary and Secondary Education

Marblehead Community Charter Public School

Marblehead Community Charter Public School (MCCPS) in Marblehead, Massachusetts, has seen a 30-point increase in the number of students in the “advanced” and “proficient” categories since implementing KnowAtom in 2009. According to Massachusetts Department of Elementary and Secondary Education data from the 2012 MCAS (the most recent data available), MCCPS now ranks 47th out of 873 elementary schools in the state, with 84 percent of its students achieving the “advanced” and “proficient” categories. In the same timeframe, the state of Massachusetts had 52 percent of its students achieve the “advanced” and “proficient” categories.



Marblehead Community Charter Public School				
Grade 5 - SCIENCE AND TECH/ENG*				
PERFORMANCE LEVEL	2009	2010	2011	2012
ADVANCED	19	26	19	42
PROFICIENT	35	43	43	42
NEEDS IMPROVEMENT	40	30	30	15
WARNING	6	0	9	2

↑ began using KnowAtom in 2010

Marblehead Community Charter Public School

Title	% of District	% of State
First Language not English	0.0	17.3
Limited English Proficient	0.0	7.7
Low-income	7.0	37.0
Special Education	16.1	17.0
Free Lunch	6.1	32.1
Reduced Lunch	0.9	4.9
High Needs	22.2	47.9

* Data Source: Massachusetts Department of Elementary and Secondary Education