



The

GE Foundation Developing Futures™ Program

What the Grant Means to Stamford Schools

SPRING 2009

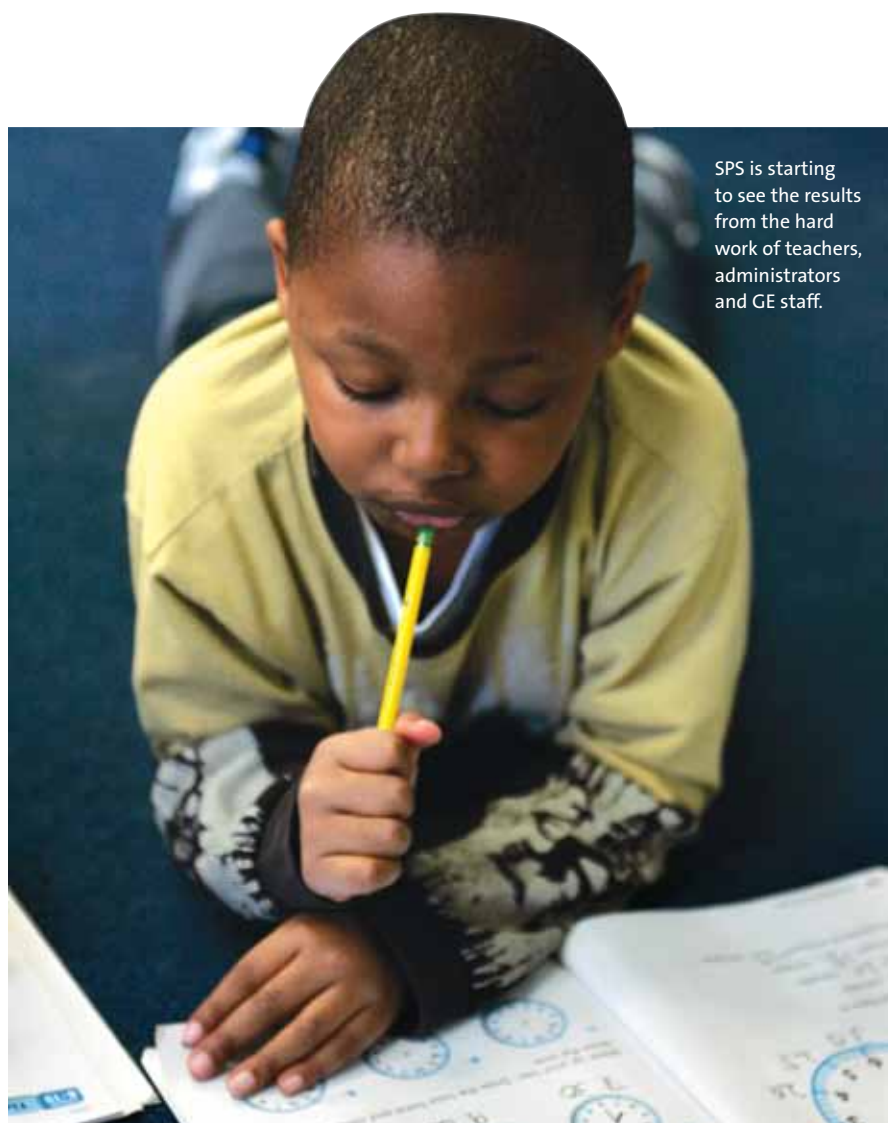
In 2006, when Stamford Public Schools (SPS) was awarded a five year, \$15.3 million GE Foundation Developing Futures™ in Education grant, it was only the second public school district in the country to receive such support. Today, in addition to Louisville, KY (the original grantee), it is joined by Cincinnati, OH, Atlanta, GA, Erie, PA, and New York, NY, bringing the GE Foundation's investment in US education close to \$150 million. All of these cities have close ties to the GE businesses that are located there, and also presented a compelling case for the need and desire to embark on district-wide change.

Now halfway through the grant cycle, SPS is starting to see the results from the hard work of teachers, administrators and GE staff. The goal is to ensure that all SPS graduates are college-ready. The major grant initiatives include: implementing common, standards-based, rigorous curricula in math and science; increasing time for teacher collaboration; enhancing teacher content knowledge; using data-based decision making; applying coaching strategies; and creating cutting-edge science facilities in all secondary schools.

Professional development is a major focus of the grant, and has been a key factor in the successful roll-out of the new math and science curricula.

"While the new curricula and the professional development stand out as the major accomplishments from the grant so far, I think it's important to note that the success has been driven by the collaboration that the GE Foundation requires be part of the process," said Lori Rossomando, President of the Stamford Education Association. "To have teachers, administrators and the district office staff working together to benefit our students has been exciting."

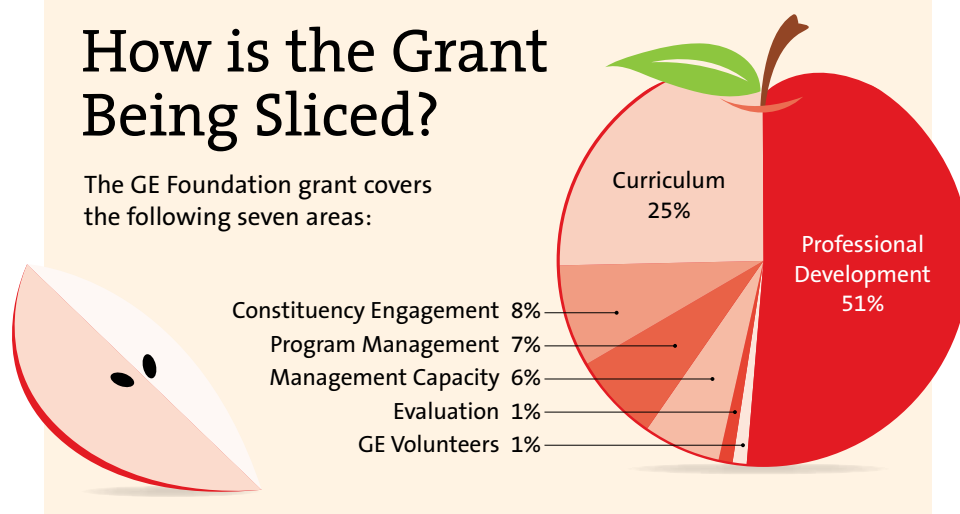
Turn the page to read highlights of the exciting changes taking place in your schools.



SPS is starting to see the results from the hard work of teachers, administrators and GE staff.

How is the Grant Being Sliced?

The GE Foundation grant covers the following seven areas:



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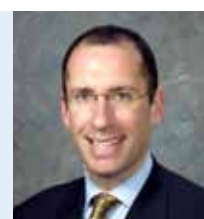
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New Math: It All Adds Up



Elyssa Walker in class with students Hema Rawal, Morgan Yacavone, and Jalen Judson (left to right)

teachers, offering feedback and ideas on how to improve instruction. The coaches are there to support the teachers—helping them to be successful rather than evaluating them for a performance review.

“Teaching has changed,” Alan explained. “With the new middle school curriculum, Connected Math 2, the instruction is student-focused, not teacher-focused. This means the teacher shares a concept, and then students work in groups to see how they want to approach and solve the problems. At the end, they present their work back to the class, and that’s when we really see all the different ways there are to approach problems. They learn by doing and learn from each other.”

Of course, students aren’t the only ones who are learning—the teachers are learning as well.

“One of the strongest aspects of the new math program has been the support that is behind it,” added Elyssa Walker. “We have regular professional development with the consultant from Everyday Math, who shows us the best way to interpret student data from progress checks and our ongoing assessments tools, how to differentiate the games and hints from an insider’s perspective. It has been incredibly helpful.”

While the teachers agree that it will take several years to see system-wide improvements in test scores that reflect the changes in the math curriculum, they already see students who are more enthused, more engaged and more interested in learning math.

“I’ve been a teacher for more than 10 years,” Melissa Vallejo added, “and for the first time I hear students saying ‘I love math!’” That adds up to success.



When does $1+1=10,000$? Never really, but when you take an exciting new curriculum (1), and add some intensive professional development (1), you get more than 10,000 students learning math in a new, more intuitive way.

One of the key focuses of the GE grant is math. But how do you go about changing the way teachers teach and students learn?

“It’s easy to just give teachers a new book and say, go and teach it, but that never really works,” explained Elyssa Walker, 1st grade teacher and Elementary Math Liaison at Newfield Elementary School. “This time, teachers were part of the curriculum selection process, and were given all of the resources needed to actually deliver it the way it is designed.”

Having resources has been a part of the program’s early success. In elementary school, for example, students learning math through the Everyday Math program (currently K–4) have their own kits, which have a variety of tools to help them test different strategies for solving programs.

“When students are first learning math concepts, we encourage them to develop their own strategies for problem solving. After they explore and share their own methods, several alternative algorithms (steps to solve a problem) are shared, with a focus on those that are the most efficient and easy to use,” explained Melissa Vallejo, Title 1 Math teacher and Elementary Math Liaison at KT Murphy Elementary School. “It’s the variety of tools that make the biggest

difference: number grids, number lines, daily routines, and games. The kids love the games!” (see sidebar).

Edith Presley, Individual Learning Needs Coach and Elementary Math Liaison at Northeast Elementary School, sees another big advantage of the new program. “By its design, the new curriculum allows for differentiated instruction, so even students who may be struggling are using the same tools and the same books. This is really important because in the past, those who were behind used a different book and there was a stigma attached to it. When you get rid of that social and emotional label, it opens all sorts of doors to children.”

The new resources involve more than just tools. The math liaisons at the elementary schools, and the math coaches at the middle and high schools, are also resources that are proving to be indispensable to the successful implementation of the math program. Having teachers in the schools who have a special focus on math and the new curriculum helps all teachers to be successful.

Ask Alan Hayes, the math coach at Rippowam Middle School, who describes his role as “supporting the implementation of the new math curriculum.” But it’s much more than that. Teachers meet once a week for grade level meetings where they talk about different ways of teaching, implementation of the curriculum and any issues they are having, data on students and best practices. In addition to guiding these meetings, math coaches visit classrooms and observe

Math Happens Everyday

One of the best ways for elementary age students to learn and understand math concepts is by incorporating them into everyday life. Newfield Elementary School teacher and Elementary Math Liaison Elyssa Walker shared some of her favorite ways for families to involve children in math:

- Play board games** – rolling dice, counting spaces, taking turns
- Count change** – and let them exchange change for bills when they have enough
- Bake** – measurements are a great way to understand and see fractions
- Laundry** – make pairs of socks
- Estimating** – shopping, eating out, look for opportunities to estimate when you purchase different combinations of items
- Grocery shopping** – comparing prices, estimating what you can pay (Imagine you only have \$5 and want to buy items for lunch, what would you pick?)

TEACHER spotlight

Edith Presley
Individual Learning Needs Coach and Elementary Math Liaison, Northeast Elementary School

Where did you go to college?
I went to Grambling State University for my undergraduate degree, earned my Masters of Education/Special Education from Mercy College, and I am completing my administrator’s certification through Sacred Heart University.

How long have you been teaching?
I’ve been teaching for 8 years.

What’s your favorite hobby?
I love cooking and enjoying my time with my family.

What do you like best about your job?
I love my job because I get the opportunity to help prepare young learners to meet the challenges of the ever-changing world, particularly through the Everyday Math Program which builds problem solving skills with real life applications.

Taking Science to the Next Level

Volcanoes erupting, bulbs lighting, engines roaring. These are just a few of the results that young scientists can expect through the new science curriculum being rolled out in elementary and middle school. Key elements of the new curriculum are that it is aligned with the state standards, it provides a clear plan for all schools to follow and it gives teachers a pacing guide and progress assessments.

In elementary school, the new science curriculum kits focus on three areas: earth, physical and life sciences. The roll-out to 5th grade began in the 2007–2008 school year and will be completed this year; K–4 implementation began this year and will be completed by the end of 2011.

“The kits are great because they give us what we need to ensure that students in every school are learning the same thing. But the biggest change is in how teachers teach,” explained Laura Lynam, 4th grade teacher at Stark Elementary School, who also served on the elementary science curriculum committee, which chose the curriculum and developed the pacing guide. “Today, science instruction at all levels is inquiry-based, which means more hands-on, more questions and less explanation.”



For example, rather than explaining how a circuit works, students might be given a light bulb, some wires and an energy source, and asked to get it to light. “These investigations are hands-on experimentation. Once they work on that

for a while, we’ll regroup and discuss what we saw, what we learned, and what happened,” Laura added.

“The real cornerstone of inquiry-based instruction is helping students figure things out on their own before we give them the answers,” said Louise McMinn, 8th grade science teacher at Scofield Magnet Middle School. Another way to explain it is, “activity before concept,” meaning let the students see what they can discover by trying to work something out, then when the actual concept is presented it has some context. The teachers agree that it is a more exciting way to reach students.

Rolling out a new curriculum and a new way of teaching requires professional development, and the grant has provided this. Teachers in elementary school received training on each aspect of the program before it is rolled out. Teachers are also invited to identify conferences and learning opportunities they’d like to attend, which the grant funds. In addition, the GE Foundation sponsors a conference with NASA each summer that teachers and administrators are invited to attend.

Inquiry-based instruction is also used in high school, where curriculum committees have worked to ensure there is a common syllabus, pacing guide and mid-term and final exams. There has also been an increase in science electives, like forensic science, biotechnology, and AP environmental science, to encourage students to take four years of science.

“This is an exciting time to be teaching science,” added Joe Aibinder, of Westhill High School. “The resources, especially the technology, that the grant has provided for science teachers make it easier to illustrate concepts and engage the students. That’s why we are all here.”

“Today, science instruction at all levels is inquiry-based, which means more hands-on, more questions and less explanation.”

— Laura Lynam, 4th grade teacher at Stark Elementary School

NASA Clubs Take Off

It might seem that the only place to learn about force, motion, Earth and space is in science class, but thanks to the high school NASA clubs, that is not true. Three teachers—Sara White at AITE, Joe Aibinder at Westhill and Tara Driscoll at Stamford High—are the club advisors, and they strive to make science even more hands-on and fun. The clubs vary at each school, but all introduce students to the science of space including biology, physics, engineering, chemistry, and human physiology.

Because NASA’s mission is to pioneer the future of space exploration, scientific discovery and aeronautics research, it provides resources to help meet the demand for scientists and engineers. In 2007, the GE Foundation partnered with NASA, providing teachers with high quality professional development focused on content and inquiry. Through this partnership, and access to the digital learning network provided by the GE Foundation grant, teachers are able to link live with NASA scientists for in-depth discussions on a variety of topics.

At AITE, where the club is known as RSPACE—Our (R) Studies in Planets, Aerospace, Cosmic Environments and Engineering—sixteen AITE students meet weekly to prepare activities that they share with 56 students at Hart Magnet Elementary School.

“Students look at content much differently when they know they are going to have to teach it to someone else,”

explained Sara White, who in addition to advising the club, served on the curriculum writing committee for high school science. “Their goal is to be engaging and fun, and to prepare the younger students for what rigorous classroom instruction is like.”

For the students at Hart, the club allows them to explore aspects of science they wouldn’t normally learn in the classroom. “We were able to do a live discussion with a NASA astronaut, so we are now considering all of the aspects of life in outer space,” explained Thamar Deronnette, who teaches 4th grade and facilitates the club meetings at Hart. Currently the students are learning about hydroponics—growing plants in a solution with nutrients and no soil.

Joe Aibinder at Westhill focuses on rocketry. “It’s been terrific because of our relationship with NASA. The digital learning network enables us to have live conversations with actual rocket scientists and discuss the issues and challenges we are having.” Students apply the principles they learn in science to building and launching rockets.

At Stamford High School, the NASA club is in its first year. Students meet once a week with club advisor and science teacher Tara Driscoll. “Since this is a building year, I let the students drive the conversation and determine what they want to investigate. Earlier this year we took part in a digital learning session with NASA called Mission to Mars, so travel to Mars has been the focus so far.”

Whether the focus is on Mars, or the rockets to get there, the NASA clubs are enabling students to test their understanding of science, ask questions of the experts and reach for the stars.

TEACHER spotlight



Sara White

High School Science Teacher & NASA Club Advisor, AITE

Where did you go to school?

I went to the University of New Haven for a B.S. in Forensic Science, to Southern Connecticut State University for a M.S. in Science Education and to Southern a second time to get a 6th year degree in Special Education.

How long have you been teaching?

I’ve been teaching high school science for three years.

What are your favorite hobbies?

I enjoy reading, gardening, and baking.

What’s the most exciting thing going on at your school because of the GE grant?

It’s our upcoming trip to NASA’s Kennedy Space Center where students will meet and interview an astronaut as well as a solar energy engineer, take part in an astronaut training session, and go on several behind-the-scenes tours of the space center as well as Cape Canaveral. Depending on the flexibility of the schedule, we may even get to view a shuttle launch. This trip sets a precedent for inquiry learning experiences outside the classroom.



GE GRANT TIMELINE

Summer 2006

- GE Foundation Summer Conference for staff on Best Practices at Work

School Year 2006–2007

- Stamford awarded GE Foundation Developing Futures grant
- K–5 teachers participate in Mathapalooza Professional Development (PD) to increase math content knowledge
- Everyday Math (EM) program selected to provide standards-based math curriculum at the elementary level; all teachers K–2 receive PD

Summer 2007

- GE Foundation Summer Conference for staff on World Class Teaching and Learning
- Institute for Inquiry Training (science) PD

School Year 2007–2008

- EM is rolled out to K–2; ongoing PD
- Physical Science and Earth science kits implemented in 5th grade
- Math coaches introduced at middle schools and AITE
- Ongoing Tech Boot Camps provide PD and laptops to 175 staff

Summer 2008

- GE Foundation Summer Conference for staff on Building a Collaborative Culture
- NASA Force and Motion workshop and leadership conference for science teachers
- PD for all middle school and AITE math coaches and Stamford Excellence Team coach
- Institute for Inquiry Training (science) PD

School Year 2008–2009

- Phi Delta Kappa Literacy Audit
- Middle School Reform research and planning
- Continued implementation of EM program to 3rd and 4th grade
- Implemented common math assessments for grades K–4
- Implemented science modules for K–5
- Science lab assistants assigned to elementary schools
- Standards-based math curriculum using Connected Math (CM) program rolled out to 6th grade
- Common Algebra 1 curriculum developed and implemented
- Stamford Excellence Team coach works with Turn of River MS and Westhill staff
- High School science curriculum committee develops and begins implementation of common syllabi, pacing guides and assessments
- Ongoing Professional Learning Community facilitator training
- Professional Learning Communities meet regularly in all schools
- Common Algebra 1 Curriculum implemented in all HS and MS
- Math Solutions PD for Elementary Stamford Excellence Team

Summer 2009

- GE Foundation Summer Conference on Leadership

School Year 2009–2010

- EM to be rolled out to 5th grade
- Standards-based science curriculum to be implemented in middle school
- Roll out of standards-based math curriculum using Connected Math (CM) program rolled out to 7th grade
- Continued development of high school elective courses in Chemistry, Biology, and Physics/Physical Science
- Common Geometry and Algebra II curriculums to be created and implemented

Developing Futures is made possible through a grant from the GE Foundation. For questions or comments, please contact Brendan Fox, District Project Manager, GE Foundation Developing Futures in Education at 977-5308, bfox2@ci.stamford.ct.us or Peter Ruppert, Co-Coordinator, 977-4934, pruppert@ci.stamford.ct.us.

Editor: Laura McCafferty Photography: Greg Raymond
Design: Taylor Design Printing: Goodway Printing

Printed on recycled paper

A Conversation with Dr. Joshua P. Starr

SUPERINTENDENT OF SCHOOLS



Recently, Dr. Starr shared his thoughts on the impact the GE Foundation Developing Futures grant has made to Stamford Public Schools (SPS). Here are some of his comments:

Q How has the grant helped deliver on the mission of the Stamford Public Schools?

Our mission is to prepare each and every student for higher education. That doesn't necessarily mean that every high school graduate will go to college, but rather that they will have the skills necessary to do so, if that is what they choose. The grant has helped us do that by leveraging system-wide change. For example, we knew that we needed higher standards in math and science, and the grant has enabled us to do that.

Q What has the focus of the grant been?

In addition to the professional development and curriculum changes that are discussed in this newsletter, GE also provided expertise with human resources processes, managing and using data more effectively and how to manage change.

Q Are there key things parents should know about the changes that are happening?

Parents should know that we have higher standards now, and we are working hard to ensure the standards are consistent across schools. We are changing the way math is taught—the materials are more engaging, students are learning the language of math earlier and there's a greater focus on how to get an answer, and not just on the answer itself. Students are also talking more about college readiness—the skills they need to have, the concepts they need to understand and master. That kind of dialogue is really exciting.

Q What else excites you about the changes going on?

The grant has helped us to make some big changes—especially in the way students learn and the way we teach math and science. About half of the money goes toward professional development of teachers, and they really seem to like having the opportunity to learn and grow. There is a direct impact on the classrooms. You know many grants are focused on “structures”—looking

at things like block scheduling—and it doesn't get down to the actual classroom. That's not the case here. We are looking at the relationship between the teacher, the student and the content, and that's really impactful.

Q When can parents expect to see the impact of the grant?

We're already seeing the impact. Our second and third grade teachers are saying they've never seen students so prepared for math, and that's thanks to the K–2 program (that was rolled out in the 2007–2008 school year). Eighth grade science is more hands on, and the students are learning to do lab reports. We are seeing more high school students taking four years of science, so to encourage even more students, we are offering more choices, like forensics and psychology. Finally, student achievement in the math and science portions of the 2008 CAPT increased by 11 points and five points, respectively. That can't be ignored.

The grant has helped us to make some big changes—especially in the way students learn and the way we teach math and science.

However, it's important to be really clear that it will take 7–10 years to see system-wide impacts. Real change takes time, and people need to understand that. There's only so much we can ask teachers to do at once, so we are phasing things in, ensuring we are training teachers along the way, before we move on to the next element.

Q Any final thoughts for parents?

At the end of the day, the key to success is hard work. Regardless of whether it is work, school or athletics—if you want to be successful you have to work hard. And getting a great education is no different. If students are willing to put in the work, they will be successful. And that's our goal.