



Science, Technology, Engineering and Math

Meeting the STEM challenge

Over the past two decades, the world has experienced a fundamental change in the way just about everything is done. Technology has touched every human endeavor, from engineering and medicine to communication, art and music, transforming the very nature of our world and how we relate to one another. Employment in careers that support this

technology is expected to grow by over a million jobs in the next several years to 9 million, according to numbers from the U.S. Bureau of Labor Statistics.

Educating our students to operate in this new environment is the primary goal of a series of new initiatives introduced at all Neshaminy schools this year. These changes, outlined in a recent report (available on the District web site), started with the introduction of new



Maple Point MS students examine an object created with the school's 3-D printer, designed using industry-standard Inventor software. Each middle school and the high school operates 3-D printers.

classes, activities and clubs, and will continue next year with increased participation at all grade levels.

The concept of STEM is far more than simply re-labeling classes in various subject areas, according to NSD Director of Math, Science and Technology David Geanette.

"STEM is an integrative approach of all the subject areas," he said. >> Continued on page 2

STEM Expo planned for May

Students from all Neshaminy District schools will have a chance to show off some of the many projects they have been working on during the first annual STEM Expo at Neshaminy High School Thursday, May 28. This event, which will be open to the public, will give visitors a glimpse into a variety of activities including robotics, computer-aided design, environmental science, food science, art, math and much more with demonstrations, hands-



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UPCOMING MEETINGS

Tuesday April 7

School Board Action Meeting and work session, 7 pm

Monday April 13

Board Ad Hoc Committee, 6:30 pm

Tuesday April 14

Board Policies Committee, 6:30 pm

Tuesday April 21

Public Board Meeting, 7 pm

Saturday April 25

Breakfast with the Superintendent, 9 am

All meetings held at the Maple Point District Board Room unless otherwise indicated.

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Innovation

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“It’s the teaching of concepts in activity, project and problem-based learning experiences, rather than just talking about them.”

Examples of this approach can be found at all grade levels. At the high school, the robotics class involves the physics of motion and electrical circuitry combined with mathematical equations and computer programming to design and



program robots to complete specific tasks.

In AP environmental science, students study different habitats, measure the density and diversity of trees and use scientific sampling techniques to create a sustainable forest while

still harvesting the trees on a regular basis. Their plans are put into practice at the 125-acre Idlewood Environmental Station on the high school property.

The Technology and Engineering Education department has continued to expand its Project Lead the Way engineering curriculum in the middle schools and the high school. At the middle level, all three buildings are using units from the Design and Modeling courses to provide students with real-world design activities. Some of the activities are modeled using AutoDesk Inventor and outputted using the newly purchased 3D printers. The middle school curriculum is evolving to support more science learning while interjecting more of the PLTW content.

At the high school, the PLTW curriculum is in its second year of existence. The program currently offers Introduction to Engineering Design, which is similar to the MS unit and has students utilize Inventor along with numerous modeling techniques. In Principles of Engineering, students are currently utilizing the Vex building materials and RobotC to build and program robotic material sorters. In Digital Electronics, students use MultiSim, industry standard circuit design software, to model and design circuits and will begin using Arduino coding to create autonomous vehicle.

Next year, the high school will add Computer Science and Software Engineering and Civil Engineering and Architecture to the course offerings. The middle school program will continue to expand their use of the Design and Modeling units and investigate further engineering options.

All three middle schools have introduced computer clubs this year. Students interested in learning more advanced

coding, further exploring internet and mobile applications and experimenting with new technologies such as augmented reality and robotics can now expand their learning beyond the school day.

A new STEM/tech ed course for fifth-grade students attending the middle schools is set to begin next year.

In the elementary schools, students are studying physical science using FOSS kits. This program is designed to foster scientific inquiry through hands-on observation, experimentation, testing, and analysis at every grade level.



Each District elementary school has also re-introduced Science Fairs this year, a project that gives students the time and resources to test a self-generated scientific theory during the school year, test it and present their results to fellow students and parents.

STEM highlights at Neshaminy HS

COURSES

- ▶ **Advanced Placement Chemistry:** This new course has two sections this year. Many students in these classes will be taking the AP Chemistry exam.
- ▶ **AP Environmental Science:** The number of sections rose to three this year. NHS will once again be participating in the annual state-wide Envirothon competition in May, their 10th time competing.
- ▶ **AP Biology:** Microbiologist Dr. Nancy Oliveria is using a state-of-the-art Thermo Cycler as part of the Genetics lab activities.
- ▶ **AP Physics:** Students are engaged in problem-based learning. One recent project was the construction and launching of a weather balloon.
- ▶ **Project Lead the Way:** Classes include Introduction to Engineering Design, Principles of Engineering, Civil Engineering and Architecture, Computer Science and Software Engineering and Robotics.
- ▶ **BCIT:** Business Computers and Information Technology classes are also connected to the STEM curriculum. In 2015-2016, students can choose Microsoft training and certification prep, Business SIM and APP programming for web and application design, Cyber Forensics and Digital Law, and Virtual Business Simulations that use software to mirror real-world business operations.

CLUBS, ACTIVITIES

Robotics Club, Environmental Action Club, Delaware Valley Science Fairs, #girlSTEM conference, Mathletes, Science Club, Future Problem Solving

#GirlSTEM

Though in the past STEM subject fields have been male-dominated, Neshaminy is committed to encouraging female participation in classes and activities. This year, 80 middle school girls from the district will be participating in the #GirlSTEM conference at Delaware Valley University in Doylestown, the third year for this event.

Summer Program

Elementary and middle school students can also participate in summer STEM camps, to be held at Neshaminy HS this summer. Information about the camps can be found on the district web site.



STEM Online

For a complete report about the STEM programs in the Neshaminy School District, please visit the district web site

www.neshaminy.org

Expo

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on activities and exhibits.

In the gymnasium, middle school technology and engineering students will be involved with STEM problem-based design challenges during the expo. Examples of these challenges include the use of model cars, balloons or boats to complete tasks or solve a problem. Expo spectators can watch as teams from each middle school compete to complete their challenges.

Groups from outside the District have also been invited to the Expo, including Bucks County Community College, Bucks County Technical High School, and the NASTAR Center in Southampton. Additional exhibitors may be added as the date approaches.

STEM Advisory Council

The District is actively seeking community members to participate in a STEM Advisory Council. The purpose is to assist with the implementation and monitoring of the STEM program and help develop a plan for K-12 STEM education. Those involved in STEM-related businesses and professions are encouraged to join this effort and share their expertise.

For more information, please call David Geanette at 215-809-6550.

Neshaminy Health Fair debuts April 8 at Hoover

The Certified School Nurses of Neshaminy School District will be hosting the first annual Neshaminy Health Fair Wednesday April 8 from 6-8 pm. The show will be held at the same time as the Hoover Art Show, but all district families are encouraged to attend.

The fair will feature demonstrations, giveaways, activities, exhibits, games and much more. A variety of community

organizations will be represented, including the Lenape Valley Foundation, Lower Bucks Family YMCA, Bucks County Department of Health, Wills Eye Hospital, Families Living Well, Neshaminy School District Food Services, and the Bucks County Medical Reserve Corps.



The goal of this fair is to provide information about the connection between academic achievement and good health, foster positive eating and exercise habits, and inform families about the many health services provided by the school nurses at Neshaminy and also by the many organizations in our community.

Important Keystone / PSSA information online

April and May is the time for the annual PSSA Tests (for elementary and middle school students) and Keystone Exams (for middle and high school students). Important information about the tests have been sent to all parents; this information is also available on the Neshaminy web site (www.neshaminy.org).



Please see the web site for you child's school to read the letter for parents and general information that will help you prepare your children for this important state-mandated assessment.

CONSOLIDATION UPDATE

Everitt to close, Tawanka work to begin

By a vote of 7-2, the Neshaminy School Board voted in March to close Everitt Elementary School starting at the end of the current school year. This closing is part of the comprehensive plan to reduce the number of school buildings in the district to match current population needs and trends.

Demolition work and construction of a new elementary school at site of the former Tawanka Elementary School on Brownsville Road in Lower Southampton is scheduled to begin after the end of the school year in June, 2015. The new school, which is expected to house about 810 students, will be completed by the start of the 2016-2017 school year in August, 2016.

The Bucks County Intermediate Unit leases the current building on the Tawanka site for their alternative school and programs, and has committed to moving these operations to Everitt Elementary once it closes as a district elementary school. The District is in the process of securing a five-year lease for Everitt from the BCIU.



Artist rendering of the new Tawanka Elementary School, scheduled to open in August, 2016.

Students leaving Everitt Elementary School have been re-assigned to Albert Schweitzer, Miller, or Pearl Buck Elementary Schools. Middle school assignments will not change under this new plan. A map showing both the elementary and middle school districts is available on the Neshaminy web site.

5-8 GRADE TRANSITION UPDATE

The 5-8 Work Study group met in March to finalize several aspects of the plan for fifth-grade students transitioning to the middle school next year. Among the items discussed:

Adoption of the Symtalk world language program for fifth-graders was approved and finalized. This program introduces students to fundamentals of several languages to build a foundation for future studies in specific languages. The program may be expanded in future years, and eighth-graders will have access to a full foreign language program in French and Spanish next year.

The group recommended a recess break for fifth-graders during the school day. This break will last from 15-20 minutes every day, and depending on the season, weather and other factors will range from an in-class break to outdoor activities. Assignment of fifth-grade teachers is now underway. Many current fifth-grade teachers have expressed interest in moving with the students to the middle schools, and final assignments will be determined by that interest as well as the staffing needs of each school based on the current student population.

The district Facilities Department has completed the bidding process for lockers at the middle schools to accommodate the fifth-graders. They are also surveying the availability of other grade-appropriate desks and chairs to ensure that incoming students have the correct size and style of furniture.

1:1 Technology Initiative expanding

The anticipated plan to provide each fifth-grade student with their own iPad during the 2015-2016 school year has expanded to include sixth-graders as well.

Students will use the iPads for many classroom activities, and will take them home each night so they can continue their studies and complete homework on the devices. Each iPad will be loaded with appropriate educational software as well as security applications to prevent inappropriate use both in school and at home.

Under the plan, the devices will be insured under a group Apple Care plan at no extra cost to families of the students. Repair or replacement of damaged iPads will be available within certain guidelines and limitations.

The district is planning information sessions toward the end of the current school year for parents and guardians of students that will be part of this initiative, to outline details of the program and answer any questions.



NEWS FROM OUR SCHOOLS

Pearl S. Buck ES

Science Fair showcases student projects

Buck students prepared displayed their scientific knowledge during a Science Fair in March. The fair was open for fellow students during the school day, and an evening open house was held for families.



Kindergartner a fundraising star

Maya Malone, a kindergarten student at Buck, received the March of Dimes Shining Star Award for raising the most money to support the work of the March of Dimes in their recent Reading Champions program. Pearl Buck Elementary School raised \$3,500 toward that cause with two classrooms, Mrs. Kuriger's and Mrs. Deitrick's, earning a pizza party for reading and raising the most money. Over the past 6 years, Pearl Buck has raised close to \$25,000 for the March of Dimes.



Samuel Everitt ES

Students join Operation Helping Hand

On Wednesday March 11 Everitt students in all grades brought food items to school as donations for community members in need. Each grade was assigned a specific non-perishable food item, and the proceeds will be distributed through the United Way of Bucks County. This annual program collects food items at schools throughout Bucks County.



Joseph Ferderbar ES

Students sing at Choral Festival

A group of eight Ferderbar singers participated in the day-long Bux/Mont Choral Festival held at Good Shepherd Church on Street Road in Lower Southampton March 21.

Ferderbar Fantastic Readers win a ribbon

The Reading Olympics team competed and took home a ribbon at the district-wide competition held at Neshaminy High School recently. The team had to answer questions about books they collectively read for the competition.



Oliver Heckman ES

Mad Science an after-school success

Students in grades 1-5 continue to enjoy weekly, after-school Mad Science classes. During the current unit, students are exploring The Sciences of the Senses – an array of experiments that engage the senses, including magnetism, taste, food science, optical illusions, sound, and light.

This is the 11th year for Mad Science at Oliver Heckman.

Herbert Hoover ES

Hoover wins Innovation Grant Award

On the heels of a 'Reward High Achievement' Title I designation in January, Hoover Elementary was awarded a grant totaling \$48,915 in March by the Pennsylvania Department of Education (PADOE) Division of Federal Programs. The competitive grant application was only available to schools that won the earlier designation, and only 30 schools in the state out of a total of 87 Reward High Achievement schools actually won the grant.

According to the PADOE, the Innovation Grant is designed to promote new learning structures and learning processes to meet individual student needs. The staff at Hoover presented a specific list of items to be purchased under the grant such as instructional material for literacy intervention, science lab kits, portable Smart Boards, and professional development classes.

"Winning this competitive grant is another testament to

the dedication and work being done by the Herbert Hoover staff," said Principal Michael Rodriguez. "We are grateful to have hard working students and the support of Hoover families in achieving this milestone," he added.

Lower Southampton ES

LoSo celebrates spring, baseball

Students and faculty wore their Phillies red to celebrate the home opener against the Red Sox April 6. Staff members also enjoyed some baseball-themed lunch items such as Cracker Jacks and hot dogs.



Two teams win green at Reading Olympics

Two teams of fourth and fifth-graders from Lower South won green ribbons at the District Reading Olympics competition held at Neshaminy HS March 25. Reading Olympics is a fun activity where students compete through rounds of questioning about books they collectively read.

Walter Miller ES

Annual Science Fair a success

Miller students had an opportunity to show off their talents at the school's Science Fair March 4. Teachers and volunteers



helped the children find tables to set up their displays and answered questions.

Projects included everything from hands-on demonstrations

about tornadoes to displays of animals and plants, human anatomy/physiology and new ways of charging iPods and cell phones. Those attending the event were able to learn which drinks have more sugar, what melts snow the best, how to get electricity from fruit and even whether eating snow is a good idea. It was a fun day with over two hundred participants and one hundred forty projects!

Albert Schweitzer ES

Positive Behavior program lauded

The Positive Behavior Intervention Support program at Schweitzer was recognized by the Pennsylvania Department of Education as a 'High Fidelity Implementation School' after an evaluation of the CARES (Cooperation, Attitude, Responsibility, Empathy and Safety) program at the school recently. The school will receive a banner in May for this achievement.

Service Learning Club provides help

Schweitzer's Service Learning Club continues with their yearly charitable deeds. In early March, the club held a coat drive to provide coats to needy families. Also in March, the club held a crazy hair fund raiser to support purchasing toys for children with multiple disabilities.

Maple Point MS

Snow can't stop Coaches vs. Cancer

The third time was a charm for the 2nd annual Coaches vs. Cancer basketball tournament at Maple point Friday March 13. After two weather delays, the fundraising tournament finally got underway with a doubleheader between teams from Maple Point and Carl Sandburg Middle School. Hundreds of students, parents and friends came out to enjoy the evening.

The Maple Point seventh-graders completed an undefeated season, and the Carl Sandburg eighth-graders hung on to a three-point win.

The games were buffered by prize giveaways, a three-point contest and other fundraising activities. The event was



sponsored by the Maple Point Student Council, with help from faculty co-directors Neil French and Jason Pienta. Proceeds benefit cancer research.

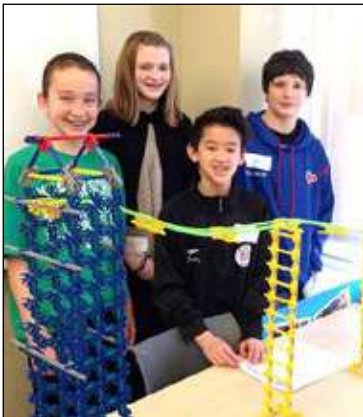
Young engineers face a design challenge

7th grade AE (Academic Enrichment) students from Sandburg, Poquessing and Maple Point participated in the Bucks County K'nex STEM design challenge March 12 at Delaware Valley College (soon to be University) in Doylestown.

The top two teams of four from each middle school went to the event, which included a total of 67 teams in two age brackets, 4th-5th and 6th-8th grades.

The challenge this year was to move a ping pong ball 4 feet long across a table. The groups had exactly two hours to build their design using K'nex.

The team of Dylan Campbell, Chris McVey, Ryan McColgan and Phillip Duffy from Maple Point came in second for the 6th-8th division.



Poquessing MS

Computer Club crafts recycled robots

Computer Science Club members have been busy building robots from some old technology.

These robots were all made from recycled computer parts saved from their last activity in which students disassembled computers in order to learn about hardware components.



Although these are not working robots, students did learn many vital STEM lessons such as how design, technology and engineering come together.

Using their creativity, students began by developing a design for their robot. Next, they

were challenged with the task of assembling it by using only the recycled parts and pieces in the classroom. Using problem solving skills and teamwork, students overcame these obstacles through various modifications in both design and technology.

Carl Sandburg MS

'Into the Woods' a fairy tale hit

The annual Sandburg musical featured a very different take on familiar nursery rhymes this year in an adaptation of the Stephen Sondheim Broadway production of Into the Woods, which was also recently released as a Disney movie.



Dressed as characters including Little Red Riding Hood, Rapunzel, Cinderella, Hansel and Gretel and more, the students delivered outstanding performances for their classmates, younger students, their families and the community spanning four days and six performances.

Al Durante featured on TV show

Long-time Neshaminy staff member, coach, assistant and all-around supporter Al Durante was profiled on a segment of the Fox 29 weekend news report Saturday April 4. The



87-year-old Durante, known to generations of students in the district for his boundless energy and enthusiasm for all things Sandburg and Neshaminy, is still employed as an assistant at the school, runs an after-school and weekend basketball program and is a

fixture at the school throughout the week.

Al was also recently honored by the Bucks County Chapter of PIAA Basketball Officials with a Lifetime Achievement Award. In addition, Al is to be featured in an upcoming book authored by Lower Southampton ES physical education teacher Bob Wright and his father. The book is a collection of short stories about people who have made a difference in their lives.

The video can be viewed on the myfoxphilly.com web site and on the Neshaminy district web site.

Neshaminy HS

Boys bowling team takes state titles

With sirens wailing and lights flashing, a procession of fire trucks from area companies brought the 2015 NHS boys



bowling team to school Monday morning March 23, two days after they took the championship title during the PIAA state championship in Ephrata, Lancaster County. This is the first state championship ever for the team.

Team member David Moffitt also won the individual state title. Moffitt made news earlier in the season for rolling the second perfect 300 game of his high school career in February at Penndel Lanes during a game against Council Rock North. He has bowled five other perfect games outside the team.

Team members AJ Wolstenholme and Holden Tisone also qualified for the state tournament, finishing 14th and 24th respectively.

The team is coached by NHS teacher Mark Dunfee.

Following the grand fire truck entrance, the team members were honored at a ceremony held in the NHS hub in front of their families, classmates, staff members and the local media.

Musicians selected for state festival



A group of talented Neshaminy HS musicians spent a few days in Hershey for the Pennsylvania Music Educators Association All-State Music Festival. The students that were honored with this selection are:

- All-State Band: Danny Aslanian – Clarinet, Stephanie Rue – Horn, Adam Victor – Trumpet
- All-State Wind Ensemble: Andrew Northrup – Bari Sax, Stephen Hopkins – Horn
- All-State Choir: Joey Rippert – Tenor

These students will have the opportunity to rehearse with outstanding guest conductors during the three days of the festival and will present a concert on Saturday, March 28 in the Hershey Theater.

Juniors win science awards

Two Neshaminy High School juniors won awards at the recent regional Delaware Valley Science Research Competition held at Delaware Valley College (soon to be Delaware Valley University) in Doylestown.

Kevin Faccenda placed first in Botany and will be moving up to the next level of competition. Further, Kevin was awarded the Heritage Award, and \$10,000 per year scholarship to Delaware Valley University for all four years should he decide



to attend there. Eishna Ranganathan placed as runner up in the Behavioral & Social Sciences category.

Kevin moved on to the next round at Drexel University in Philadelphia.

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