Lighthouse News @Scholars

Fall-Spring 2016

Gifted and Talented Awareness Month

The New Jersey Legislature has designated March as Gifted and Talented Students Month in order to raise public awareness of gifted and talented students. The Orange School District held its first Open House to celebrate the accomplishments of students in the Gifted and Talented program at Scholars' Academy during the week of March 21st-24th. Parents and district staff had the opportunity to spend the day at Scholars' to engage with students as they went through a typical day of learning, exploring, and creating.

At the March Board of Education meeting, a GT Awareness Month video was presented and can be viewed by following the link below!

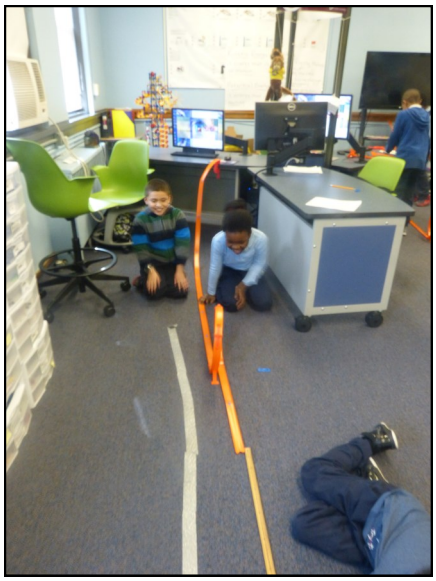
http://tinyurl.com/zueayg4

gifted&talented

1st Annual Gifted and Talented Student Expo!
Thursday, May 19, 2016
Scholars' Academy
268 Capuchin Way
3rd GT Floor
(Please note, there is no elevator access)
GT Students must arrive by 5:45 pm
Doors open for guests at 6:00. Guests may wait in the OASA café.
Exhibits open until 7:30 pm

As Easy As Pi!

Pi Day (March 14) was literally a huge smash as students were able to purchase shaving cream pies and throw them at Mrs. Machuca. They had to complete math problems first before hitting the target!



Hot Wheels Curriculum for Kinetic and Potential Energy lessons in STEM! More STEM on pages 8-9

ELA—Mr. Brooks

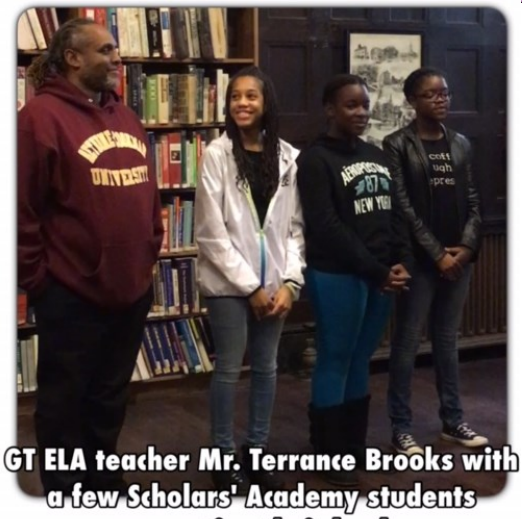
This year we journeyed into creative moments in Literacy. The children were challenged to travel to places , design insects that would destroy humans, and explore imaginary lands similar to that of Alice in Wonderland.

Grades 7th & 8th are venturing in the world of reality trying to find out how to pursue justice. They are discussing real -life issues to video taping and presenting their own reality show called "Speaking out with Young Minds". They've already filmed their debut episode which was on Freedom of Speech. Their second episode was on the right bear arms. They're now talking about who should take the next Supreme Court's vacant seat a Liberal, Conservative or independent? They're learning every Monday that it's alright to raise a question and to speak their minds freely.

Tuesday's group of 5th & 6th graders have been tackling cyclic patterns of change and each group has selected a piece of literature to support their findings on events in society that continue to change the way in which we as a society operate. Recently they've been asked to take on another community project that's affiliated with the Hands Incorporated under the guidance of Mr. Pat Morrisey, Mr. Chris King, and in conjunction with Montclair State University. The project is called, "Reverse Archaeology", which isn't actual digging, but it is looking up artifacts and historians that are still alive and research on what was Orange like before the construction on Interstate 280.

The 5th – 8th grade students have been multitasking with novel reading suggested from the William & Mary College's Kendall Hunt gifted and talented curriculum as well as participating in competitions such as the Forensic Interpretative Reading and Declamation Speaking for the Essex County Steering Committee for the Gifted and Talented. They've been challenged to make some offbeat creative decisions and to learn how to speak their minds intellectually and articulating their right to speak freely.

For Wednesday, the 3rd and 4th graders are also reading suggested novels from the Kendall Hunt curriculum dealing with Literary Reflections and how they effect change in our society. They are working on a talk show called, "Let's Make a Change" and they've just completed their auditions for their co- host and the panel of speakers to speak to the topics that effects them in their young daily lives. They are also learning how to multi-task and work more independently as they prepare for a theater workshop this Spring in Caldwell, this is sponsored by Essex County Steering Committee for the gifted and talented.

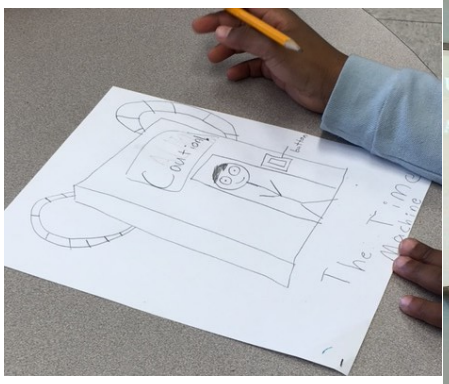


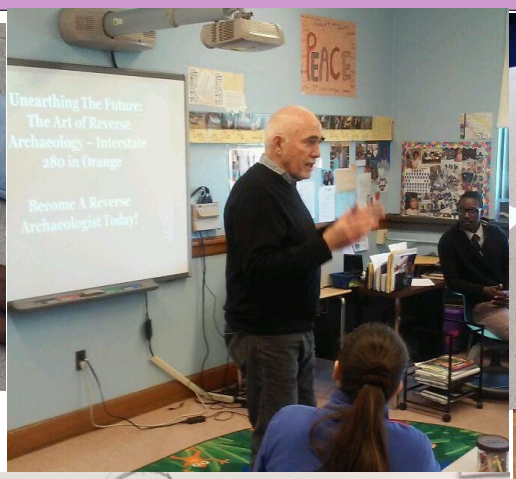
GT ELA teacher Mr. Terrance Brooks with a few Scholars' Academy students presenting their book: Our Orange: The Discovery of Our Past.

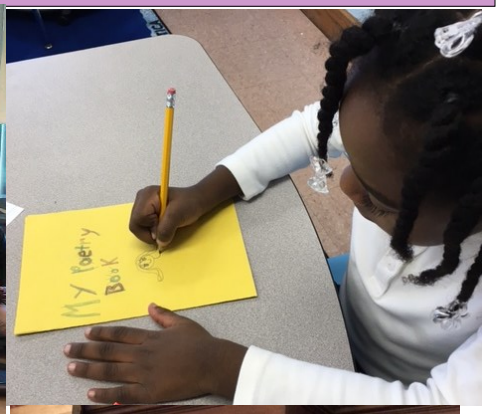
To finalize the week, the K – 2nd graders bring a different energy to the house! Students are challenged to learn how to work more independently and creatively without offending one another's feelings. On Thursday the 2nd graders are experimenting with using their imaginations and using novels to create projects in their Literature Circles. They are starting to dissect the roles in Literature Circles to so they can operate in their groups effectively and independently.

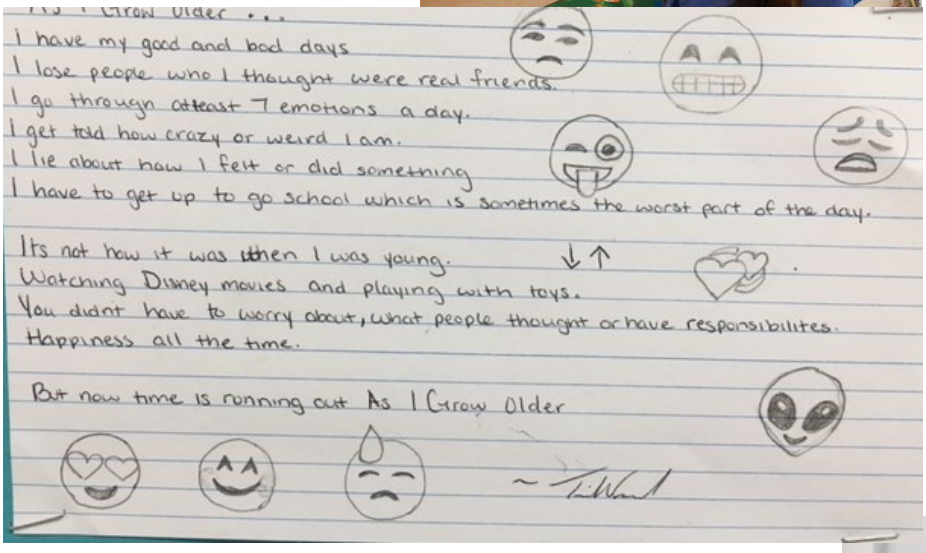
Meanwhile, the Kindergartners and 1st graders are working on a continual Poetry book, where they are learning how to use figurative language in their writings. They are using lines like Sally saw snow slipping on Saturday.

So that's how we've been moving through Literacy this year as we read it, write it, and speak it.

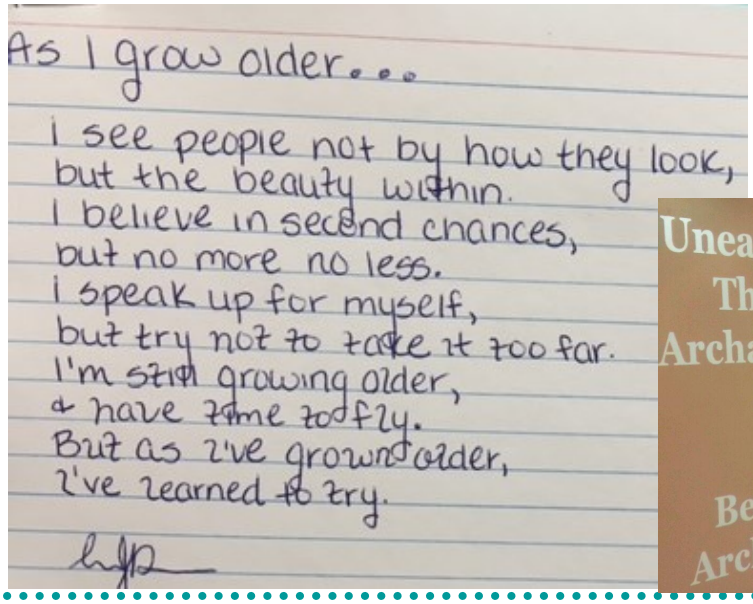


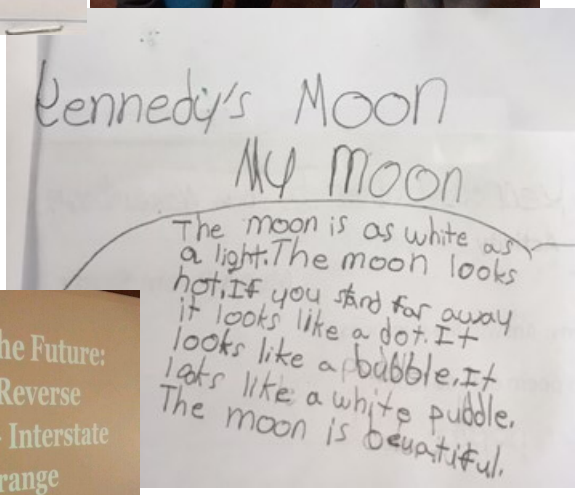

PEACE
Unearthing The Future:
The Art of Reverse
Archaeology – Interstate
280 in Orange
Become A Reverse
Archaeologist Today!


My Poetry
Book


I have my good and bad days
I lose people who I thought were real friends.
I go through atleast 7 emotions a day.
I get told how crazy or weird I am.
I lie about how I felt or did something
I have to get up to go school which is sometimes the worst part of the day.
Its not how it was when I was young.
Watching Disney movies and playing with toys.
You didnt have to worry about, what people thought or have responsibilites.
Happiness all the time.
But now time is running out As I Grow Older


Reference
coffee
uah,


As I grow older...
I see people not by how they look,
but the beauty within.
I believe in second chances,
but no more no less.
I speak up for myself,
but try not to take it too far.
I'm still growing older,
& have time to try.
But as I've grown older,
I've learned to try.


Kennedy's Moon
My Moon
The moon is as white as
a light. The moon looks
hot. If you stand far away
it looks like a dot. It
looks like a bubble. It
looks like a white puddle.
The moon is beautiful.


Unearthing The Future:
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Science—Mr. Baer

SCIENCE CORE NEWS

The Science Core students have done an amazing job this year with our "We Are Made of Starstuff" unit and with their Individual Research Projects. It would take an entire book to cover everything the Science Core students have accomplished this year, and some of them are writing mini-books about their research projects, but here are a few highlights from the year so far:

"We Are Made of Starstuff" Unit

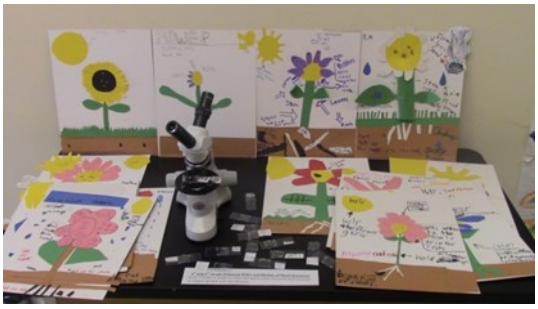
In his famous book, *Cosmos*, Carl Sagan wrote that, "we are made of starstuff." The students responded to a writing prompt asking them what they thought Sagan meant by that quote. The Science Core students then set off on a journey from their fingertips to the stars that fill the night sky. Some of the concepts that the students explored in this unit included:

1. Our fingerprints are made of folds in our skin called friction ridges and each person's fingerprints are unique.
2. The skin that makes up our fingerprint is made of skin cells. Some of the protein that we eat moves through the digestive system and the circulatory system and is used to make new skin cells in our fingerprints.
3. We can study the Food Chain to see how matter moves from one organism to another and finally ends up on our dinner plate.
4. The Food Chain begins with plants using the sun's energy to create sugars from carbon dioxide and water in a process called photosynthesis.
5. The carbon dioxide used during photosynthesis is taken from the atmosphere. The carbon dioxide in the atmosphere is just one step in a complex cycle that moves carbon through the Earth's four spheres.
6. Earth's formation, along with the carbon in contains, is the result of gravitational and electrostatic forces that pulled tiny specks of dust together into a larger and larger sphere. The material that came together to form the Earth was part of a dust cloud called a nebula. Nebula are formed when a large star runs out of fuel and explodes in a supernova. All of the elements created during the star's lifetime and during the supernova become the seeds of new stars and new planets. Through these concepts the Science Core students created a road map from the atoms that are created inside a star all the way to their very own, unique fingerprint. A writing prompt completed at the end of the unit showed that the students understood that we truly are made of the stuff of stars.

1st/2nd grade looking at plant cells

From stars …..

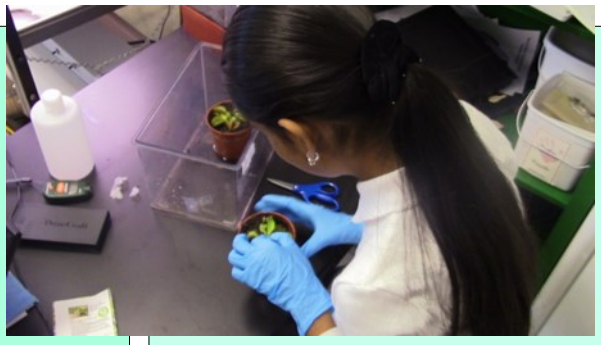
…. straight to our fingertips!



1st/2nd grade plant structures/ functions

Science—Mr. Baer

Venus Flytraps



Individual Research Projects

Each Science Core student selected an individual research project based on their "spark." During their investigation the students learned about the science practices and applied them to their project. The students were required to: 1) Ask a scientifically testable question about their phenomenon. 2) Obtain and evaluate information about their phenomenon. 3) Develop an initial model that suggested an answer to their research question. 5) Plan and carry out an investigation to verify or falsify their initial model. 6) Collect and analyze data from their investigation. 7) Generate arguments from evidence based on their data analysis. 8) Communicate information about their research project to their fellow scientists.

This year's Individual Research Projects included dissections on frogs, pigs, a rabbit and a cat, exothermic and decomposition chemical reactions, sketchbook studies of the evolution of feathers in dinosaurs, dog anatomy and the structure of leaves among different plant species, DNA extraction, centripetal force, the Magnus Effect, factors that affect acne development, Venus Flytrap behavior, freshwater microorganisms, crystal structure and growth, electric circuits, energy transfer, pH scale indicators, Cheetah anatomy, and probability analysis of intelligent alien lifeforms. As you can see, this list shows the depth and breadth of our student's passion for science.

Growing crystals

Evolution of feathers in Dinosaurs

Extracting DNA from strawberries

Exothermic chemical reaction

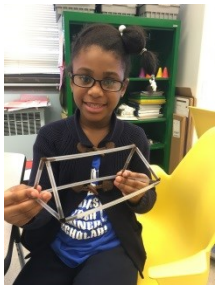
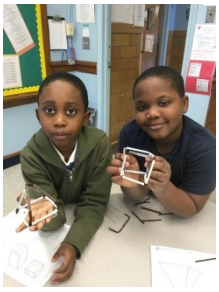
Math—Mrs. Keogh

Spring has Sprung, and the Math Core at Scholars Academy has been hard at work all year long on some very exciting projects.

1st and 2nd Graders Prepare to Host Shape Gallery

Our 1st and 2nd grade students have been working on Geometry, and are using the *Mentoring Young Mathematicians* curriculum to learn all about Transformations, Tessellations, 2D and 3D Shapes, Nets, and Symmetry. They have been working all year toward creating their final project which is a Shape Gallery called SMILE (The **S**ensational **M**ath **I**nstitute for **L**earning and **E**xploration). They have been writing to their friends, Dru and Teller, meerkats from the Kalahari Desert; sharing all of the exciting things they are learning at Scholars! In May, our Shape Gallery will be open to the public, for all to see our wonderful work.




Scholars Academy 3RD and 4TH Grade Math Students Host Shopping Extravaganza!

Third and fourth grade students worked on an Algebra Unit called *"At the Mall with Algebra"*. It is part of the M³ Curriculum for Gifted and Talented students. As a culminating activity, students turned their classroom into a mall with a variety of shops. Students became owners of each shop, and their task was to make signs advertising merchandise specials. Each store owner had to create two types of signs in their store: one that used a single equation and one that used a set of equations to advertise their special deals. Students synthesized their understanding of solving equations; and demonstrated mastery on the big ideas of variables and equality.

Special shopping guests for the event included the principal of Scholars Academy, Mrs. Machuca; along with Deputy Superintendent, Dr. Howard, Director of Curriculum, Instruction, Professional Development and Data Assessment, Dr. Russo, Supervisor of Mathematics (3-5), Ms. Harris and Math Coach (3-5) Ms. Kim. All of the Scholars Academy teachers, including Mr. Baer, Mr. Brookes, and Mrs. Nadbielny brought their students to shop at the mall as well.

Some of the wonderful shops created for this project included: a video game store, a sports store, a jewelry store, a restaurant, and school supply store, a candy store, a toy store and a pet store.

A great day of shopping and learning was had by all!

Math—Mrs. Keogh

Middle Schoolers Explore Challenges of being Stranded on a Deserted Island.

Students have been working on the Building Math curriculum published by the Museum of Science in Boston. The Book is titled **Stranded!** and students were faced with 3 real-world challenges.

- **Design Challenge 1: A Storm Is Approaching!**

Design a shelter to protect you and your team from a storm.

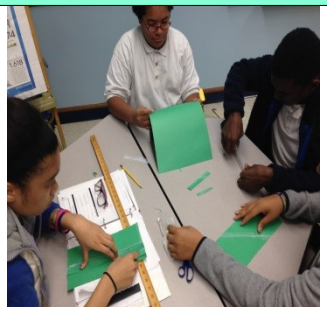
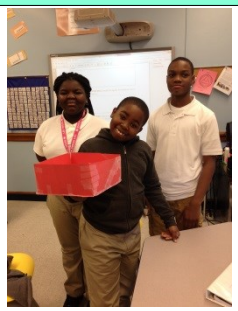
- **Design Challenge 2: We Need Water!**

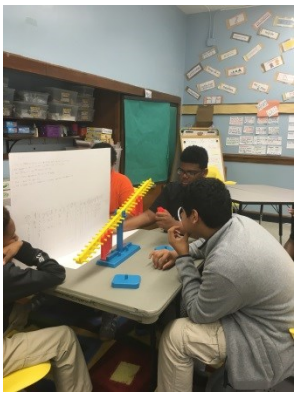
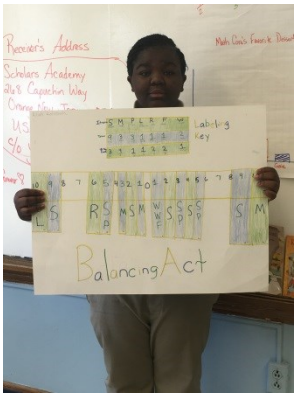
Design a water collector with enough capacity for you and your team.

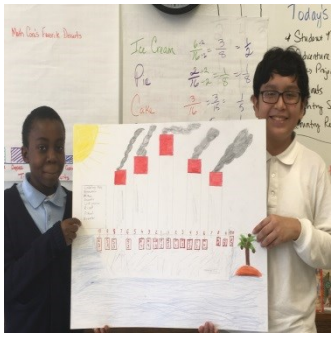
- **Design Challenge 3: Balancing Act !**

Design a loading plan that can keep people and objects balanced in a canoe.

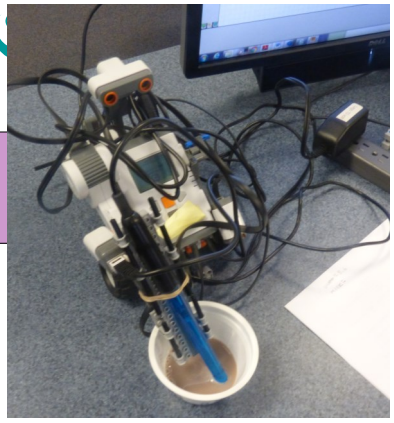
These challenges integrate real-world math and engineering design concepts with adventurous scenarios that draw students in. The activities in this program enforce critical thinking skills, teamwork, and problem -solving, while bringing students' classroom experiences in line with the Common Core State Standards.



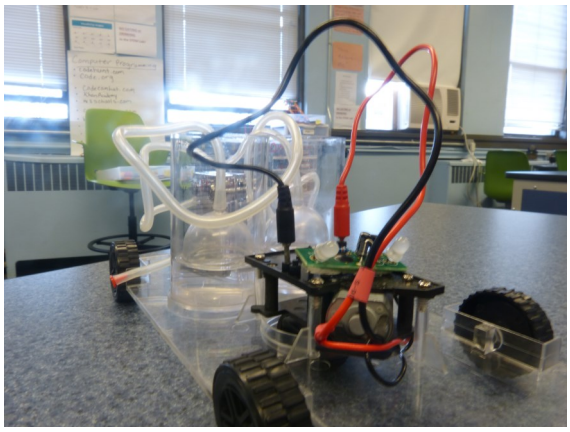

STEM—Mrs. Nadbielny

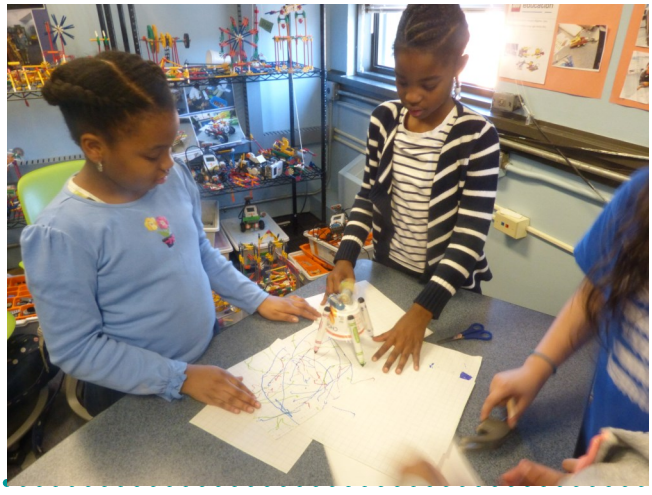


It's another exciting year in the STEM lab as we prepare students for college and career success by promoting the application and mastery of problem solving, critical thinking and teamwork skills. Students are engaged and excited as they explore many different engagements in the STEM lab. We started the year off with team building competitions using engineering skills to design a chair out of newspaper and tape to support the weight of a stuffed animal. Students from 1st grade to 8th grade worked in small groups on this challenge. Students also worked in pairs online in Contraption Maker which is new to our STEM lab. Contraption Maker is an engaging Rube Goldberg machine game that teaches kids how to solve engineering problems and make their own inventions. Recently students from 3rd to 8th grade worked in small groups to build a scribbling machine. Building a functioning circuit was at the heart of this activity and students had a great time! Many of our activities allow students to master STEM skills such as critical-thinking, perseverance, and experimentation.

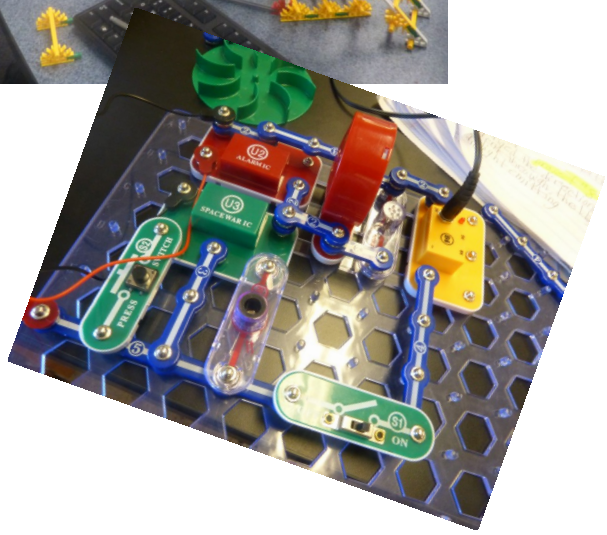
Once again all students from 1st to 8th grade participated in the Hour of Code the week of December 7th in the STEM lab. We have continued with coding in our STEM lab as we move through the lessons from Code.org and Kodable. Students are creating computer programs that will help them learn to collaborate with others, develop problem-solving skills and persist through difficult tasks. *Every* student should have the opportunity to learn computer science. It helps nurture problem-solving skills, logic and creativity. By starting early, students will have a foundation for success in any 21st-century career path.

Many of the engagements that students explore are building and programming robots using Lego WeDo or Lego Mindstorm NXT. Students in 5th through 8th grade have learned how hydrogen fuel cells electrolyze water to produce hydrogen fuel and then built a hydrogen fuel car. From





STEM—Mrs. Nadbielny

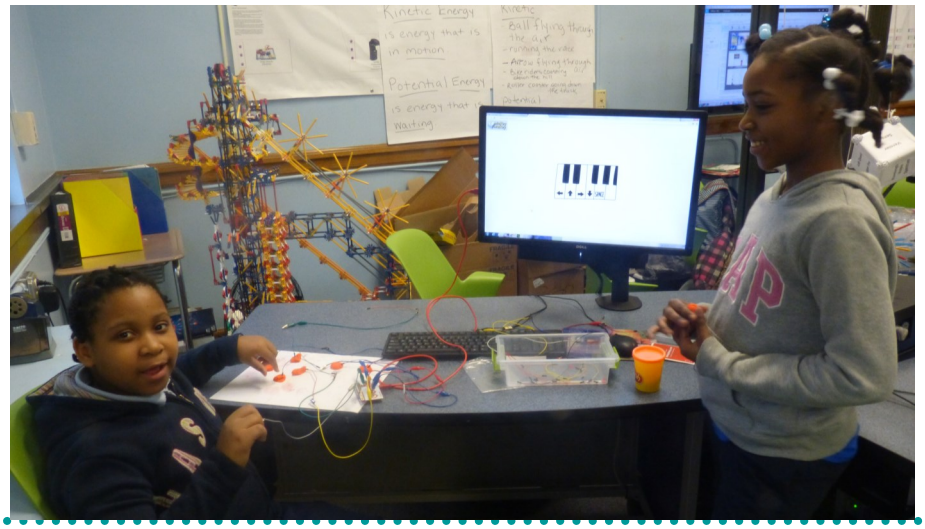


there they built solar paneled cars and their own cars using a motor, battery and empty water bottle. Students also enjoyed learning about circuitry and completing a circuit using Snap Circuits and Makey Makey. Students have also explored lasers and how they work, created stop-motion animation stories with Frames and Animation-ish, and learned basic robotics control and programming with Sphero (similar to BB-8).

Five 4th grade students from Scholars Academy participated in the annual Essex County Tech Day for Gifted and Talented. Each student worked with other students they did not know from different schools in Essex County. They worked together on a STEM-based activity to design and create a water tower with a limited supply of materials including straws, toothpicks, tape, Play-Doh and a can of seltzer which represented the tower.

Another new and exciting addition to our STEM lab this year was a FREE Classroom Kit from Mattel. I applied for this kit last June and it arrived five months later and included 40 Hot Wheels diecast cars, 16 loops, 16 track clamps, 64 connectors and over 100 feet of track. In 3rd and 4th grade we have been going through the Hot Wheels Speedometry lessons as students learn through play. The lessons encourage inquiry and real-world, problem-based learning through hands on activities. The activities are designed using the 5E Model (Engage, Explore, Explain, Elaborate, and Evaluate) to support students in asking questions and creating experiments to determine the answers. The hands-on activities build upon each other to develop a coherent conceptual understanding of Potential and Kinetic Energy, Measurement and Distance, Representing Data with Charts and Presenting Findings from Research Projects.

In addition to coding, our K-2 students have been learning about the six types of simple machines and how they work. We have been discussing lever, wheel and axle, pulley, inclined plane, wedge, and screw. Students have been building various types of simple and compound machines with K'nex and are learning how to identify them. They also have an opportunity to test their knowledge online with EdHeads; an online educational resource. They also created presentations using Pixie software and each presented to the class.



Essex County Gifted and Talented Committee Competitions

Scholars Students Earn Well Deserved Accolades at Essex County Competitions

Scholars students participated in a Problem Solving Competition at Essex Fells Elementary School, and brought home a 1st and 3rd Place. Scholars students participated in the Essex County Challenge 24 Competition at Milburn Middle School. 7 out of 16 students advanced to the Semi-Finals!

At the Forensics competition in Livingston in January, students presented their public speaking skills in an eloquent manner and one student from the Orange school district team made it to the final round! We are making our mark in the GT community!

Scholars Academy
268 Capuchin Way
Orange, NJ 07050
Phone: 973-677-4000 Ext. 1801
Fax: 973-675-1460
website: www.orange.k12.nj.us/scholars
Twitter: Principal_KM