



Lighthouse News @Scholars

Family Math Night!



Despite some snowy and chilly weather, several families gathered at Scholars Academy to engage in some Math activities just for fun and some quality family time. On December 10th from 6:30-7:30 p.m. in Oasis Café under the leadership of Scholars Math teacher, Mrs.

Shannon Keogh, families were engaged in a variety of hands on math games and events. Ghost Whisperer was a group favorite as students' minds were read by the computer! The computer knew what number each student was thinking about! Give it a

try! Go to the following website and see for yourself!

<http://flashlightcreative.net/swf/ghostwhisperer/>

The Family Night events will resume in the month of April and May to include a Language Arts night and a STEM night! Stay up to date with events by following the Scholars webpage: www.orange.k12.nj.us/scholars



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Science—Mr. Baer

The Science Core students at Scholars Academy are hard at work on their Individual Research Projects. We currently have dissections of squid, starfish, Perch, and sheep brains going on and we are expecting a shipment of frogs and fetal pigs this week. We also have a number of chemistry projects happening including endothermic and exothermic reactions, acid-base reactions, and reactions involving Le Chatelier's principle. The students are learning to

apply the NGSS Practices to their own investigations by developing a model of their phenomenon and planning and carrying out an investigation to test their model. After their investigation is complete and they have analyzed the data that they have collected the students



will have to present their findings to their classmates.

Our 1st and 2nd grade Scholars have been hard at work studying electricity and magnetism. They have built simple circuits using our Snap-Circuit kits and have investigated the strength of different types of magnets. Our youngest scientists are also getting hands-on experience with the lab equipment here at the Scholars Academy. They worked with our Ken-A-Vision compound

microscopes to view insect anatomy and to investigate why Pop Rocks pop. They are really looking forward to our next unit where they will be working with beakers, test tubes and graduated cylinders to investigate changes in the states of matter.





Math—Mrs. Keogh

February is upon us, and we are embarking on many exciting Math Adventures at Scholars Academy!

Beginning on February 6, 2015, students will be participating in an Essex County math contest on Sumdog! Students will take part as a class, and compete against other classes, locally.

Each student will create an avatar for the contest, and all scholars who answer 100 questions in the contest will receive an exclusive Myths and Legends outfit for their avatar.

Sumdog adapts its questions to each student's ability and the range of questions asked is directly aligned to the Common Core State Standards.

Middle School Students are also working on an exciting Design Challenge in Math. Their task is to design a small-scale water-



filtration system that can be scaled up to an actual system that is several thousand times larger. Their smaller model only has to filter 250 mL of water. This Task is the second in a series of three from the Building Math Series: Amazon Mission.

Elementary Students continue their work with Multiplication and Division using the Mentoring Mathematical Minds Curriculum, designed specifically for Gifted and Talented education. In this Unit, students are developing their number sense with a focus on a deeper understanding of multiplication and division. This goes far beyond the computation to a solid understanding of the meaning of the operation and an ability to recognize problem situations where multiplication and division are appropriate. This unit culminates with a game similar to Jeopardy in which students practice and synthesize their newfound learning about multiplication and division in a motivational format.

Primary Students are studying different place-value systems. Students begin looking at patterns in our own Base Ten System, and use what they learn to help them discover what constitutes a place value system and a base system. In the end, they will gain a much deeper understanding of our numeration system, a system that they

might have been able to use easily beforehand but never fully understood. This Unit culminates with the students creating their own numeration system, while synthesizing their knowledge about place value.



We are looking forward to an exciting second-half of the school year!

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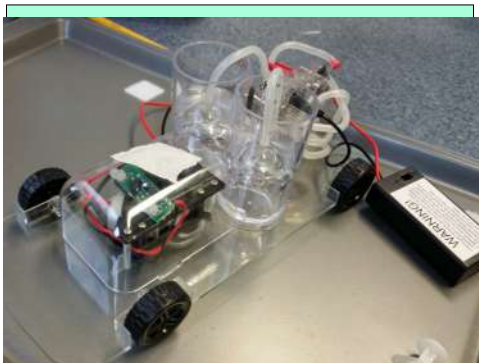
STEM in Action—Mrs. Nadbielny

It was an exciting week in the STEM lab as all of the students (1st to 8th grade) participated in the largest learning event in history: The Hour of Code, during Computer Science Education Week (December 8-12). Over 97 million students around the world tried an hour of code. After discussing the importance of computer science and watching online tutorials, students had a choice to code with Anna and Elsa from Frozen or Angry Birds. *Every* student should have the opportunity to learn computer science. It helps nurture problem-solving skills, logic and creativity. By starting early, students have a foundation for success in any 21st-century career path. All of the students received a Certificate of Completion after coding and were given logins and websites to continue coding at home.

In the STEM lab 1st and 2nd graders learned about types of polygons and built shapes with Zometools. We discussed two and three dimensional shapes, closed shapes and open shapes. They also learned about different types of angles and used Zometools to create right, straight,



acute and obtuse angles. Recently we have been dis-



cussing the six types of simple machines: lever, wheel and axle, pulley, inclined plane, wedge and screw. Each week students have an opportunity to build a different simple machine using K'nex. After building they test their knowledge of simple and compound machines using the Edheads online game. Some of our 3rd through 6th graders have been learning about robots and how they work. They have been building Lego Mindstorms NXT Robots and then programming them to move using sensors to guide their movement. The programming and engineering process is from Carnegie Mellon Robotics Academy. Some of our 5th through 8th graders have been using SketchUp computer graphics for 3D modeling. They are learning about vector and bitmapped graphics while exploring the basics of SketchUp tools and techniques. Then they can create a 3-D object of their own design online. Others are using the Microsoft Flight Simulator to learn basic flying skills to navigate a plane. After going through several tutorials they get to practice those skills with an actual yoke and Flight Simulator X realistic computer simulation software. Several of our 7th and 8th graders

learned how hydrogen fuel cells electrolyze water to produce hydrogen fuel. They then built a hydrogen fuel car and raced each other to see which car can go the fastest and then which car lasts the longest. After testing their cars by electrolyzing water, they used solar panels and sunlight for solar energy to fuel their cars and race again.

Students researched a state or country they are from and created a state "portrait" using Pixie software. They created a visual project to share facts about a state or country. Students worked in small groups to design and create the longest bridge without load given a limited number of K'nex pieces. In the second challenge their



bridge had to support a small load without sagging or bending. After the challenges students created PowerPoint presentations to show what they learned about the different types of bridges and what their design challenges were.



ELA—Mr. Brooks

We are continuing to be one of the illuminating forces at the Scholar's Academy!

As we leave 2014 behind, the Literacy Core is pressing on peacefully and professionally in 2015. The major issues we're discussing at great length are the law enforcement injustices. By researching our grades 5th – 8th grades will investigate all types of injustices that have plagued the United States of America.

My students in grades 1st -4th are going to enrich their minds by reading some of the works of Beatrix Potter in order to engage in some in-depth discussion on how the Victorian period vs The 21st Century have made a difference in the growth of our society.

Below are the 3rd & 4th graders who were making costumes for their plays and movies they wrote from their writings , "I Am Somebody".

Left to right (Jada Howell 4th grade, Park, Chemsolith 3rd grade Lincoln Yasheka Smith 4th grade , Heywood, Dianne Paul 3rd grade Lincoln, K'Lynn Jackman 4th grade Rosa Parks, and Alysha Budhram 4th grade @Lincoln)



Nana Sapong 5th,
Forest Street School
Brevanna Stephan 6th,
Heywood Avenue School
Cassandra Dawson 6th,
Heywood Avenue School
Cindy M. Smith 5th,
Oakwood Avenue School
Martha Simon 5th,
Rosa Parks Community School
Aminah Mason 6th ,
Cleveland Street School



We also were fortunate to have an opportunity to end the year in an exciting way, by participating in the Essex County Gifted and Talented Steering Committee's Forensic Reading Competition. This event was held on Tuesday, December 16, 2014 on the prestigious Caldwell University Campus. Our JV team (grades 5 & 6) were excited to be in this type of venue where they were able to display their articulate and intellectual public speaking voices they've used in Literacy core.

I was very proud of them because they were not sure they were going to do well. Forensic Interpretative Reading is taking a performance piece of literature that the student has read and make an emotional connection with emphasis to invoke an emotion in the judges. The JV team left with an experience of a life time and the confidence in knowing when we return in the spring they can take home some trophies. We will have an opportunity to participate in a declamation competition in the spring of 2015. This is a competition where the students will have 4 – 5 ½ minutes to present a speech from memory. I Our team will be composed of 7th and 8th grades students to represent the Varsity team.



Shine Brightly!
Learn Something New Today!

