



# Lighthouse News @Scholars



## STEM — Mrs. Nadbielny

“STEM Rocks!”, is what one of our 4<sup>th</sup> graders said after him and his partner built a clothesline pulley using K’nex and had his batman Lego “zip-line” on the string. The past two months all students from 1<sup>st</sup> to 8<sup>th</sup> grade have been discovering the fascinating world of simple machines and exploring how they work. We have been discussing six types of simple machines: lever; wheel and axle; pulley; inclined plane; wedge; and screw. Students have been building various types of simple machines with K’nex and learning how to identify them. They have been discussing how these simple machines make jobs easier and how they create mechanical advantage. Many students have made connections with what we are doing in the STEM lab with what they are learning in their science classes in their home schools regarding simple machines and levers. After they finish building, they have an opportunity to test their knowledge

of simple machines online with the EdHeads website. Once they master the simple machines, they can challenge their skills with the compound machines in the EdHeads game. EdHeads is an online educational resource that provides free science and math games and activities that promote critical thinking. A couple of our 7<sup>th</sup> and 8<sup>th</sup> grade students finished building the Big Ball Factory using K’nex and now we have several 6<sup>th</sup> graders working on building a second one.



To celebrate Black History Month in February students from 3<sup>rd</sup> to 8<sup>th</sup> grade selected an appropriate person to research and create a timeline presentation using Timeliner XE software. Before starting their timelines we discussed sequential thinking and discovered how timelines improve our ability to understand detailed events. Students included dates, facts and pictures in their presen-

tations and we learned new information about some famous African Americans in U.S. history as well information on some less famous African American males and females. A new addition to our STEM lab this year is MaKey MaKey, a computer controller like a keyboard or mouse. Students can turn anything that conducts electricity into a button on their computer. Students have been using various conductors for MaKey MaKey like Play-Doh, bananas, graphite from pencils, marshmallows, etc. to control their keyboard and mouse. Some students have played music on a virtual piano using Play-Doh and bananas, which then become the piano keys. Others have combined MaKey MaKey with Scratch or Kodu to control a game or animation that they programmed. MaKey MaKey is an invention kit for everyone. Students are creative, inventive and imaginative and this is one of the many instruments in the STEM lab that allows students to think of themselves as “Makers” and agents of change.

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Our 1<sup>st</sup> and 2<sup>nd</sup> graders explored physics, including friction and conservation of angular momentum as we discussed spinning tops and what makes them stay upright. They designed and built their own spinning tops using Zometools. They took the challenge to see which spinning top will spin the longest.

Soon we will be starting our lessons on Elementary Math and Geometry using K’nex with our younger students. Our older



students will explore solar energy and we will take our solar power oven outside and bake some cookies to see solar power in action.

**Mark your calendar for our Family STEM Night at Scholars coming up on May 7th 6:00 – 7:30 pm.**



## Science—Mr. Baer

In Science Core the students have completed the data collection phase of their Individual Research Projects and are now putting together their final presentations. During their presentations the Science Core students will teach a lesson to their fellow students based on what they have learned from their Individual project. By having each student teach a lesson to the class, the students will be exposed to many different areas of science.

During the research and experimentation phase our Science Core students conducted:

- 8 fetal pig dissections
- 7 frog dissections



- 4 fish dissections
- 2 squid dissections
- 2 starfish dissections
- 2 sheep brain dissections

Over 50 different chemical reactions including acid/base reactions, exothermic reactions, precipitate reactions, and demonstrations of Le Chatelier’s Principle

Countless hours of research on such diverse topics as lightning formation, Jupiter’s atmosphere, crystal formation, uses for succulents, how popcorn pops, sound waves, atomic structure, plant cell structure, and Black Holes.

In Science, our 1st and 2nd grade Scholars have been working on observing the properties of different substances. They have had the opportunity to work with beakers, test tubes and graduated cylinders during mini chemistry experiments in which they observed changes in the properties of different substances as the chemically combined. Our youngest Scholars



have also worked with Molymod molecule building kits to create their very own imaginary molecule of which they had to describe its properties and uses.

As Science Core moves forward into the final months of the school year we are looking forward to the final student presentations. We are hoping to be able to record some of these student lessons so that we can share them with the entire district.

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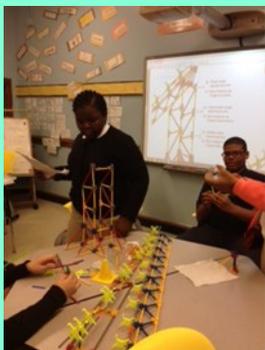




# Math—Mrs. Keogh



The Fourth Marking Period is upon us already, and it only seems like yesterday that we began the school year.



The Math Students at Scholars Academy are very busy and hard at work on many exciting activities.

Beginning on April 17, 2015, students will be participating in their second Essex County math contest on Sumdog! Students will take part as a class, and compete against other classes, locally.

On April 22, 2015, 11 students from Scholars Academy participated in their first Challenge 24 Math Competition through the Essex County Gifted and Talented Steering Committee. The competition was held at Millburn Middle School. 5<sup>th</sup> and 6<sup>th</sup> grade students competed at the Junior Varsity level using single, double and variable cards. 7<sup>th</sup> and 8<sup>th</sup> grade students competed at the Varsity Level using single, double, variable, integer, fractions and decimal



cards. Our teams worked very hard, and had an exciting day!

Middle School Students are also working on the K'NEX Education Amusement Park Experience. This activity provides an opportunity to combine real-world applications with science, mathematics, and technology in a classroom environment. The models in this construction set, which include Incline Plane, Half-Pipe, Ferris Wheel, Scrambler, Carousel, Swing Ride, Pirate Ship Ride and a Roller Coaster with a Clothoid Loop enable students to investigate not only the characteristic rides of an amusement park, but also the inclined planes and looped systems that they may have encountered at skateboard or in-line skating parks. Students have been engaged and energized as they experience the interrelationships and further their knowledge and understanding of the science, math and technology concepts associated with such rides and structures.



part of the Mentoring Mathematical Minds Curriculum (M<sup>3</sup>) for gifted and talented math students. In this unit, students explore two and three dimensional shapes with a focus on their properties, relationships among them and spatial visualization. The reasoning skills that they build upon in this unit help them to develop an understanding of more complex geometric concepts.

Primary Students are just beginning the first unit of the Mentoring Young Mathematicians Curriculum (M<sup>2</sup>) called Using Everyday Measures: Measuring with Meerkats. They are introduced to Measurement as a process that they use in their lives every day; as they explore the world around them at home, at school and in their community.



Through many exciting adventures and activities, they come to understand the concepts of measurement and the skills involved in the measurement process.



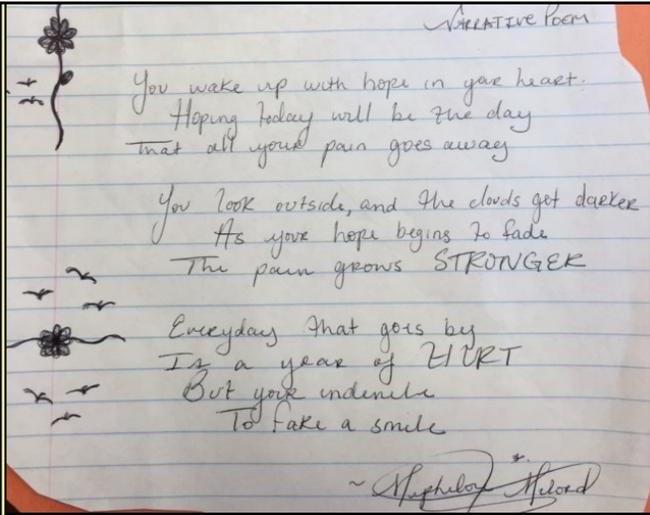
Elementary Students have started a new unit called Getting into Shapes. It is

We are looking forward to an exciting, fun-filled, investigative fourth marking period!





# ELA—Mr. Brooks



We are continuing to be one of the illuminating forces at the Scholar's Academy! Oh yes, spring is in the air, there are issues to be discussed everywhere!

The Middle Grade students are engaged in an in depth research piece on Sensationalism and the effects of Broadcast Journalism. We just completed an analytical escapade between President Barak Obama and the Prime Minister Benjamin Netanyahu of Israel and our relationship with Iran. We will also begin using many of the skills introduced in Kendall Hunt Gifted and Talented Curriculum \*, "The Pursuit of Justice". The skills we have used thus far are: Analyzing text, media, and synthesizing the information, as well as comparing and contrasting. Students have had debates about current news events and the impact of people's actions.

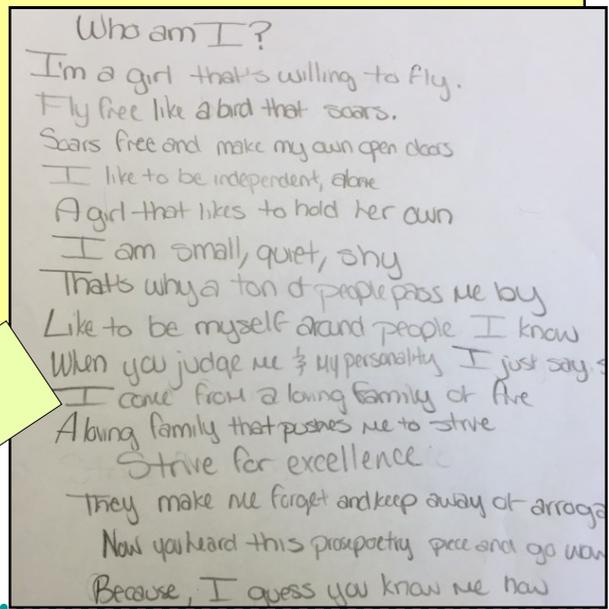
Students at the Primary level have investigated research on the Victorian Period, after having read a selection of Be-

atrice Potter's literary work: "Peter Rabbit" and the "Tale of Two Bad Mice". The students had the opportunity to investigate her life and the world in which she lived in. This provided additional opportunities to delve into those research skills to include inquiry, comparing and contrasting and synthesizing in a variety of areas such as:

- Living arrangements
- Education
- Government
- Entertainment/ Recreation
- Family & Relationships

Utilizing the Kendall Hunt Gifted and Talented curriculum, "Beyond Words", the children analyzed changing situations while using informational text.

\*The Center for Gifted Education at The College of William and Mary language arts units focus on analytic and interpretive skills in literature, persuasive writing skills, linguistic competency, listening/oral communications skills, reasoning skills, and understanding an overarching concept. We are fortunate at Scholars Academy to have invested into this program for our ELA program for K-8th grade.



**Shine Brightly!**  
**Learn Something New Today!**

**By Kayla Howell**

