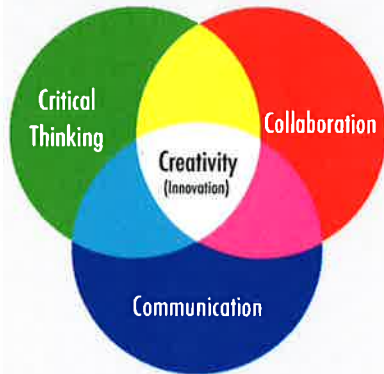


Principal's Corner

The Gifted and Talented program has been providing a plethora of various activities to engage students in the problem solving skill sets.

Within these pages, you will have the opportunity to see how the students are engaged throughout their day with hands on experiences, creative opportunities to work collaboratively, and how to apply what they are learning to real life situations.



The students are implementing the 4 C's of 21st Century Learning which include Communication, Collaboration, Critical Thinking, and Creativity.

Our STEM lab has been renamed as the STEAM lab as the "A" has been added to include the Arts. This is the creativity component for Critical Thinkers who need to solve problems and think outside the box.

The first part of the school year has been thought provoking and we look forward to expanding those skills in the second part of the school year.

—Principal Mrs. Machuca

Science with Mrs. Dormann



We began the year learning the Inventor's Secret from Henry Ford and Thomas Edison. These two great inventors both faced many challenges. Like Henry Ford, we engineered car. Our cars used balloon power.

It took multiple attempts but just like Henry Ford and Thomas Edison, we never gave up!



Next, we learned about birds. Did you know they all have different shaped beaks that help them eat different foods? We designed bird beaks that could catch different foods in different environments and tested them out in water, sand, rocks, and dirt.



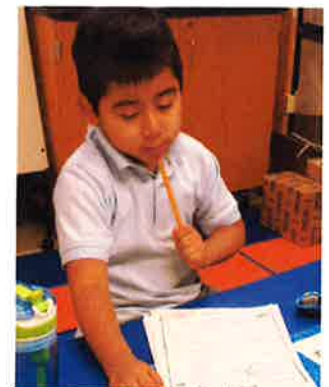
This year in Science class, Scholars are focusing on Biology which is the study of life. What better way to do that then through having life in our classroom. We will have a variety of class pets including insects, fish, frogs, salamanders, shrimp, crabs, and more!



First and Second Grade Scholars

The 1st and 2nd graders are looking at animal adaptations and how we can solve human problems using animal solutions. First we learned about different biomes and what adaptations animals have to help them survive.

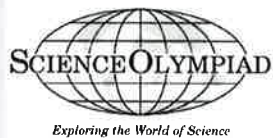
We recently studied animals that live in the tundra and are using their adaptations to design winter coats to keep us warm.



We can't wait to share our ideas with you!



This year, third and fourth graders will be visiting the Hall of Science in New York City. There we will explore life, physical, and earth science through hands-on learning and labs.



After break, we will begin preparing for Science Olympiad where we will compete against other schools in New Jersey in various Science and Engineering challenges on May 18, 2019 at the Bergen Arts and Science Charter School in Hackensack, NJ!

The NGSS incorporates engineering into its curriculum as well. The following standards are being incorporated into lessons weekly.

ETS1-1. Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.

ETS1-2. Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.

ETS1-3. Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.

Third graders are focusing on animal adaptations as well. Right now we are studying how living in groups can help or hurt a species. If you were an animal, would you want to live alone or in a group? You can watch our answers on Flip Grid!

flipgrid.com/scholars3

Fourth graders are focusing on plant and animal structures. They are exploring anatomy through dissections and research.



Fifth graders are exploring energy transfer and food webs. We are currently working on creating a life-size food web!



Third Grade Scholars



Next, we will be looking at insect adaptations. In our classroom, we have darkling beetles, millipedes, praying mantises, Bess bugs, pill bugs, mealworms, and more.

We are going to examine their structures through hands-on learning and even have an Insect Olympics to put their adaptations to the test.



Fourth Grade Scholars



We have currently dissected flowers and squid!



As the year goes on we will also be dissecting eyes, brains, fish, and insects to learn about their internal and external structures!

Fifth Grade Scholars

In October, we completed owl pellet dissections.



We have many different ecosystems in our classroom, and even created our own inside water bottles!

Humans are having a very negative impact on animals around



the world and it is affecting entire food webs. We will be exploring these impacts and trying to develop solutions. Stay tuned to find out!

Winter 2018 Gifted and Talented Newsletter - Math - Mrs. White

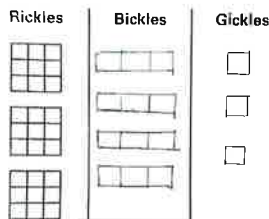
Grade 1 – Grade 2



Grade 1 and 2 has been exploring the process of addition using a base-three number system. This practice with a base three number system provides scholars with a deeper insight into the reasons for regrouping in our base-ten system. In a base three system, the only digits available to use are 0, 1, and 2; thus, when a place value exceeds 2, we need to regroup. A gickle is worth one (replaces the ones block), a bickle is worth three gickles (replaces the tens block), and a rickle is worth nine gickles (replaces the hundreds block).

We used exploration mats to regroup in base three by rolling dice and regrouping our gickles (ones block) in bickles (threes block) and then into rickles (nines block). We later subtracted or traded down our rickles (nines blocks) into bickles (threes blocks) and then into gickles (ones blocks).

We then moved onto using the base ten blocks with addition and subtraction using two digit numbers that required regrouping.



Grade 3

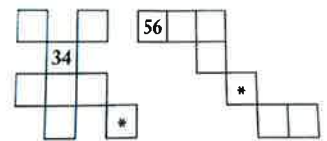


Grade three scholars have been working on finding patterns in sequences and patterns on charts and arrays.

There are many number patterns that occur on the base-ten hundreds chart.

In focusing on these patterns, scholars learn how to use a mental picture of the hundreds chart when computing sums, differences, and products of numbers. These patterns can be identified both visually and numerically. Exploring these patterns develops a deeper understanding of our numeration system.

Understanding and using number relationships (patterns) is essential to the development of algebraic reasoning skills. Mental computation strategies improve a child's ability to manipulate numbers to simplify and add more efficiently. Using the hundreds chart can help facilitate mental math strategies.



Grade 4



WORK BACKWARD

- Start with the end of a problem, and work step-by-step toward the beginning to get a solution.
- Write down what you don't know and what you do know.
- Write down each step as you get closer to the answer.
- The last step will verify that the solution works.

Fourth Grade Scholars have been working in pairs using their guess-and-test methods to solve one step equations with one variable. They also learned an alternative strategy working in pairs which was how to create and use an organized list to solve equation puzzles with two symbols that represent algebraic variables in mathematical word problems. In these lessons, scholars are gaining experience in working with sets of equations that they will see in Algebra 1. Rather than focus on writing equations, scholars were focusing on the situations in which two variables might be used in the real world. The mathematical puzzles in these lessons made them and use their logical reasoning and problem-solving strategies to figure out the solutions.

Organized List

No. of Chicks	No. of Bunnies
1	8
2	7
3	6
4	5
5	4
6	3
7	2
8	1

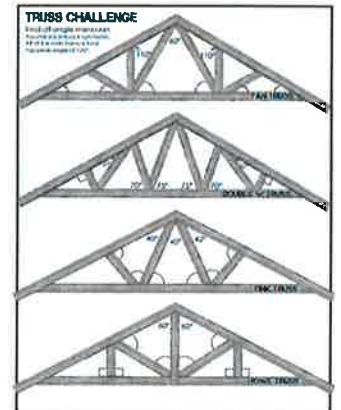
The Barnyard Puzzle
Belinda and Carlos raise bunnies and chicks. They have a total of 9 animals. If you counted all the legs of these animals, there would be 28. How many bunnies and how many chicks do they own?

Grade 5



Fifth grade scholars began by defining a ratio, writing it, using them in three ways, and explaining if the ratio represents a part to part or part to whole relationship. Scholars then began identifying and explaining what makes triangles similar. We then explored congruent and corresponding angles of triangles with proportional sides.

Scholars later used triangles with corresponding angles to build a Truss Bridge. While building their bridges, scholars used their knowledge of corresponding and congruent angles to find the angles in four different Truss Bridges in a Truss Challenge.



Full STEAM Ahead!

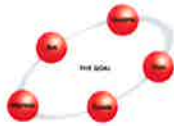
(Science, Technology, Engineering, Art & Math)

Mrs. Nadbielny



We have been off to another great start of the school year at Scholars Academy. It is nice to see so many returning students and great to welcome so many new students! We started in September with celebrating "International Dot Day" and reading Peter H. Reynolds's book "The Dot". We discussed what having a "Growth Mindset" means and completed various challenges using dot stickers and dot gumdrops.

We went over the Design Engineering Process (Ask, Imagine, Plan, Create, Test/Improve, and Share).



Students used these steps to work with a partner to build the tallest tower using only 12 index cards and 20 dot stickers.

The following week the 4th and 5th graders used the design engineering process to plan and sketch out an Eiffel Tower which they built out of gum drops and toothpicks. They had to estimate how many gumdrops and toothpicks they would use and compare that to what they actually used. We discussed the importance of having a solid foundation so the structure would not fall over.



The 1st, 2nd and 3rd graders built 2D and 3D shapes using gumdrops and toothpicks. They build a variety of shapes including pentagon, hexagon, cube, pyramid and trapezoid. We counted the vertices and angles on several of the shapes.

We discussed the 21st century 4 Cs skills:



Students in 3rd to 5th grade used these skills to work in teams of "engineers" to build a sailboat that can catch a breeze from a fan, stay afloat with weights on it and sail the length of a trough without sinking. They had limited materials to work with and had to plan and sketch out ideas, try out their sailboat and then make improvements. They did a great job with this engineering challenge!

Our 3rd graders worked in teams of "engineers" to build various structures using Keva planks. Students built ramps to move balls and marbles and they competed with each other to build the tallest structures using a limited number of planks.



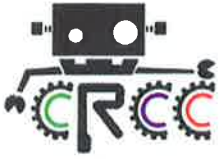
Our 1st and 2nd graders learned about different types of bridges and what makes them strong. Students used the design engineering process to plan, create and build a beam bridge using 10 popsicle sticks and 20 dot stickers. They tested the strength of their bridge by setting it across two boxes and put washers on it until it collapsed. They counted the number of washers and went back to the design process to complete the challenge again in order to improve their results.



Full STEAM Ahead!

(Science, Technology, Engineering, Art & Math)

Mrs. Nadbielny



On October 15th, all of the 5th grade students and half of 4th graders began participating in the multi-state middle school Cyber Robotics Coding Competition. CRCC is an innovative robotics tournament that excites and engages students in coding. Students competed with other NJ middle schools for this 5th through 8th grade competition.

Students coded virtual 3D robots to perform complex tasks and missions. The first three weeks included 80 “boot camp” missions. Scholars Academy finished in 2nd place among 80 schools in NJ! Woohoo!

RANKING	SCHOOL NAME	ACTIVE STUDENTS
	Walnut Street Middle School	98
	Scholars Academy	49
	Union Middle School (Rutherford)	81

The qualifying round began November 5th and ran through November 15th. It had even more challenging missions to complete. We are finished in 9th place and we were invited to participate in the Finals at NJIT on December 14th. A big congratulations to all of our coders as it truly was a TEAM effort! Special congratulations go to our top scoring coders who will go to NJIT to compete representing Scholars Academy:

J-Rondee Elane, Jayden Moinvil, Aaron Davila and Michele Tong Navarro.



We had a very exciting day on November 7th when the Competition Master of the Cyber Robotics competition, Trevor Pope, and the CEO of Intelitek, Ido Yerushalmi, paid a visit to the STEAM lab in Scholar's Academy. They were

very impressed with what our 4th and 5th graders are accomplishing. They were thrilled to see all of the students engaged in their coding missions and they answered many questions from our students. They explained that you never know where coding will take you in the future.



Coding helps our students develop their computational thinking, time management and strategy skills which they can apply to many disciplines.

Our 4th graders discovered ways that scientists and engineers can use rovers to explore places where humans cannot go. We discussed Mars Rover Curiosity as well as drones and submarines. Students built Milo the Science Rover with Lego WeDo kits and programmed them to move using various sensors. Students have also been coding Dash and Dot robots to move and we have one team of three students who are competing in the Wonder Workshop Robotics Competition. They have completed the first two missions and are working on the third of five missions.



Our 1st, 2nd and 3rd grade students have been coding in code.org. They each have their own account and are using block based coding. Students work with a partner, paired programming, to move characters in a maze. We have been discussing coding vocabulary words: Algorithm, Program, Loop, Debugging, Command, Function, Event and Conditional Statement. Last week students learned how to program a loop to be inside of another loop. In coding we call that a Nested Loop. Students combined simple shapes into complex designs with nested loops. This was a very difficult concept as we discussed interior and exterior angles in triangles and rectangles. Students are now coding angles less than and greater than 90 degrees. We also discussed “debugging” their code to fix mistakes and being “persistent” when it comes to coding as the challenges are quite difficult. They are doing a great job coding and are having fun!

