

**PRINCIPAL'S
CORNER**



Welcome to another exciting school year! I can't believe 2 months are finished already! As you read this newsletter, please take note of the 4C's of 21st Century skills being implemented and infused throughout Math, Science, and STEM classes in the Gifted and Talented program. The 4C's include Critical Thinking, Creativity, Collaboration, and Communication. These skills are essential with everyday interactions and future endeavors and opportunities for our students. In collaboration with our families, we offered our first parent workshops in October with the topic of Social and Emotional Learning. It was well attended despite Mother Nature having arrived with stormy weather! Information about different behaviors that are exhibited and strategies to support the gifted learner were discussed which included perfectionism, hypersensitivity, and low frustration level. The next parent workshop will be on November 20, 2019 at 6:00 p.m. in the Scholars Academy STEM room with the focus on Apps, Websites, and Technology to support and challenge gifted learners.

Please follow us on Twitter @SAcademy268, #goodtogreat, or #GoScholarsNJ to see weekly updates!

Principal Karen Machuca

Welcome to Science Class with Mrs. Dormann!

1st Grade Scholars

This year in Science class, 1st graders take on the role of geneticists. Students split into small groups, set up fish tanks, and choose mating pairs of zebrafish. Over the course of the 7 weeks, students observe zebrafish behavior and follow the development of resulting embryos. Each week, just like research scientists in the laboratory, 1st graders hypothesize and test ideas, ask questions, record findings, and think critically about the impact scientific research has on our community. Scholars learn about the importance of habitat, the organ functions common to both humans and fish, the role of DNA, and different science careers.

This month, geneticists have met the Zebrafish. They recorded their observations in their lab notebooks and are preparing for the next step. In order to learn the vocabulary, students received a set of Monster DNA. Students then learned about how dominant and recessive traits work and used that knowledge to create mini monsters based on parent DNA.



2nd Grade Scholars

This year in Science, 2nd Grade Scholars learn about urban planning and world hunger. They will apply this knowledge to create a vertical community garden. Students will go through the Engineering Design Process to create, test, and improve prototypes. Lessons will also incorporate an empathy portion, as well as Growth Mindset concepts.

This year introduces the engineering design process and supports practices that will build a strong collaborative learning community for the year. Scholars are encouraged to think that there are many possible solutions to a problem and do not look for one "correct" answer. They engage in class discussions and partner shares to build on and refine their ideas. Students engage in an engineering challenge to develop habits of mind and practices that will be reinforced throughout their lives.

Since vertical farms are still a new concept with only a few prototype examples worldwide, exploring vertical farms provides youths with a chance to imagine what the future could bring. Currently, students are becoming experts in the Engineering Design Process. They are using engineering to design Aid Drops to safely deliver packages to flood victims in Thailand. People who are facing devastation like this do not have access to food or clean water. These challenges introduce one of the many circumstances we will be discussing for the rest of the year.



3rd Grade Scholars

This year in Science class, 3rd graders take on the role of hydrologists. They will first be



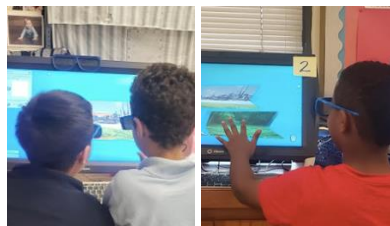
introduced to the topics of water pollution and the Global Water Crisis. The hydrologists will learn about the UN's Sustainable

Development Goals. Then they will focus on urban planning and pollution caused by runoff.

Currently, hydrologists have been using experiments, virtual reality, augmented reality, and ZSpace 3D computers to investigate water pollution. They have seen first-hand the problems and determine how it can be fixed. Water quality can be tested in 2 ways: using chemical indicators or biotic (living) indicators. First, hydrologists investigated previously collected water samples.

They discovered different macroinvertebrates living in different water qualities. They then created natural water filters and tested the chemical indicators in the water to see if the filter worked.

Next, using this information and the Engineering Design Process, the hydrologists will establish a plan to solve the problem of runoff and pollution in the city of Orange, then, the world!



This year in Science class, 4th graders take on the role of Climate Scientists. They will first be introduced to the topics of climate change and the United Nations. These climate scientists will learn about Sustainable Development Goals. Each scientist will be introduced to the UN's Global Goals. They will research different goals and choose a goal to create an action plan for and develop a prototype.

They will track their progress on an EduBlog.



Currently, the scientists are using virtual reality, augmented reality, and 3D ZSpace computers to explore the different phenomenon related to climate change.

These phenomena include the growing Giant Pacific Garbage Patch, the increasing rate of sea level rise, ice caps melting, and the accumulation of greenhouse gases in the atmosphere. Now that the 4th graders have seen first-hand the devastating impact of climate change, they will begin to research the different global goals.

5th Grade Scholars

This year in Science class, 5th graders take on the role of Anatomists. The anatomists will complete dissections on Jellyfish, Mussels, Clams, Sponges, Sea Anemone, Starfish, Sea Cucumbers, Squid, Lamprey, Crayfish, Crab, Perch, Shark, Skates, Stingrays, Worms, Nereis, Grasshoppers, Frogs, Lizards, Salamanders, Snakes, Turtles, and other organisms.

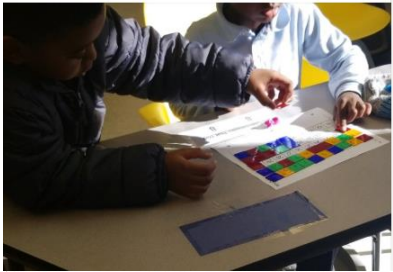
Over the course of 3 weeks, the anatomists will research the organism, dissect the organism, create a video about the dissection. All of the work will be recorded in a Reflection Blog on EduBlogs.org. Edublogs follows the format: [www.s"lunchID".edublogs.org](http://www.s\) Each 5th grader will get the chance to dissect at least 6 of the listed organisms. They will learn about internal and external structures in different animals and how those structures help the organisms survive.

Anatomists just completed their first dissections. This module included the basic aquatic invertebrates: sea cucumbers, sea stars, and clams. Anatomists will now begin their research for their next dissection on Sharks, Skates, and Stingrays!



Scholars Academy GT Family Members: Please make sure to join Class Dojo to receive weekly pictures & updates! If you are not on Class Dojo, please email me dormanka@orange.k12.nj.us so that we can set you up!
Thank you!

1st Grade Mathematicians



Welcome to Math Class with Mrs. White!

1st Grade Math

First grade scholars will be expected by the end of first grade to order three objects by length; compare the lengths of two objects indirectly by using a third object by the end of the year. We have been working on comparing the weight of two and three objects using words such as heavy, heavier, and heaviest as well as light, lighter, and lightest before measuring length. First grade has begun using and understanding the concept of transitivity, such as, when one object is heavier than a second object and when that second object is heavier than a third object, the first object is also heavier than the third object.

While direct comparison is the norm for young students, this transitive reasoning can be developed by a variety of comparison experiences, predictions, and experiments.

Scholars have been counting, filling, and comparing the weight of two bags with 50 objects as being lighter or heavier. We just began comparing three bags with three different objects

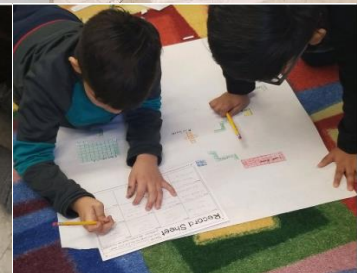
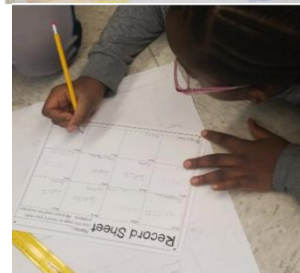
as being heavy, heavier, or heaviest as well as light, lighter, or lightest.



2nd Grade Math

In second grade, students recognize the need for standard units of measure (centimeter and inch) and they use rulers and other measurement tools with the understanding that linear measure involves an iteration of units. They recognize that the smaller the unit, the more iterations they need to cover a given length.

Second Grade has been measuring length using inches. We have been converting between inches and half inches and half inches back to whole inches. We have prepared ourselves for measuring to the nearest inch and half inch. We will later be applying that skill in a real world application such as building a car seat (built out of egg cartons and plastic eggs) with specific measurements. Later they will test out their car seats in a demo car crash-test using a plastic dump truck.



3rd Grade Math

In third grade, third graders learn to recognize area as an attribute of plane figures and understand concepts of area measurement. For example, a square with side length of 1 unit, called "a unit square," is said to have "one square unit of area, and can be used to measure area and a plane figure which can be covered without gaps or overlaps by a number of unit squares is said to have an area of that number of square units.

Third grade has been using area and perimeter to design a park of their choice while finding the math (area and perimeter) of the park exhibits. They have also been using their skills on arrays (using rows and columns) to get area by multiplying the length by the width or by explaining their array in terms of groups. For example, there are 3 groups of 5, so my area is 15 square units. We will be collecting, displaying, and analyzing research data using pictographs, scatterplots, charts, and excel spreadsheets in the days ahead.



4th Grade Math

Fourth grade learned about degrees and angles which includes line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. We first identified these in two-dimensional figures.

Later, we applied these new skills in designing a town map. (Colors on maps to be completed in the next weeks ahead.)

Fourth grade will later be analyzing and comparing two dimensional shapes based on their attributes (The shape is a quadrilateral, has four right angles, has two sets of parallel lines) and will be learning geometric transformations on the coordinate plane which are translations, reflections, and rotations.



Transforming shapes will prepare fourth grade for middle school where they will apply geometrical formulas while transforming (translating, reflecting, and rotating) coordinates on a coordinate plane.



5th Grade Math

Fifth grade has begun measuring volumes of rectangular prisms by counting unit cubes while using a layering approach. The layering approach begins with the two-dimensional shape at the base (first layer - face) and then with each following layer, we are building the height or the 3rd dimension.

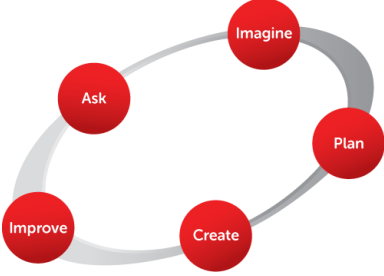
We have been discussing dimensions and cubic units and how they are different than square units. (Cubic units as having three dimensions - length, width, and height and square units as having two dimensions which are length and width.) We have also been discussing if it matters what we label as the length, width, and height of a prism.



At first, most agreed that what we label as the length and the width does definitely matter. After hands on practice with measuring those dimensions, it was concluded that we can label any side of a prism the length and the width as long as the height, is at a 90 degree angle to the length and width. Fifth also grade agreed that the volume doesn't change if we begin by measuring the first layer (length and width) on a different face of the three dimensional shape as long as the height is at a 90 degree angle or perpendicular to the length and width.

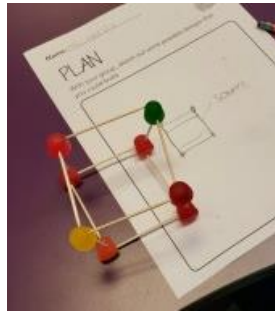
FULL STEAM AHEAD!

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 off the year in STEAM discussing what it means to have a "Growth Mindset" and using the Engineering Design Process (Ask, Imagine, Plan, Create, Test/Improve, and Share) and the four Cs of 21st century skills (Communicate, Collaborate, Creativity and Critical Thinking) when completing hands-on challenges.



Welcome to STEAM Class with Mrs. Nadbielny!

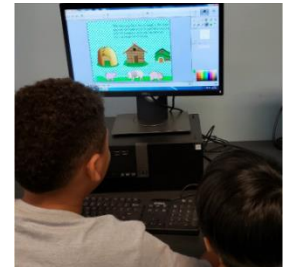
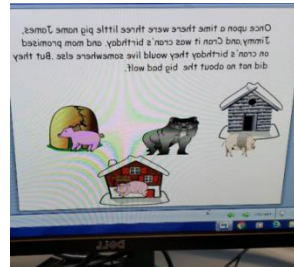
1st Grade STEAM



In 1st grade we read "The Dot" and "Sky Color" and students worked with a partner to build the tallest tower using only 12 index cards and 20 dot stickers.

The following week they built 2D and 3D shapes using gumdrops and toothpicks. They built a variety of shapes including pentagon, hexagon, cube, pyramid and trapezoid. They learned about different types of bridges and what makes them strong. They built a beam bridge using 10 popsicle sticks and 20 dot stickers. They tested the strength of their bridge by placing washers on it and improved their design. We read a book about perseverance, "The Thing Lou Couldn't Do" and discussed not giving up when challenges arise. We read "Creepy Carrots" and students worked with a partner to build a fence to keep the creepy carrots inside. Then they wrote their own story describing what would happen if carrots escaped from the fence. Their stories and fences were very creative!

2nd Grade STEAM



In 2nd grade, students created their own endings for The Three Little Pigs that they wrote in booklets and illustrated. They worked in small teams to build a house for the pigs that will stay standing with a force of wind. They brought their stories to life using Pixie Software, typing it up, adding color and pictures. They each read their story to the class. Students also created monsters which they drew and colored. They wrote a story about their monster. Then they used Chatter Pix app to record their story and bring it to life. They did a great job and were very creative. They are showing off their videos to the class.



3rd Grade STEAM

3rd graders have recently started a unit in Google CS (Computer Science)

First with activities in Music and Sound. Students are having fun with hands-on learning. They learn through video tutorials and block-based coding in Scratch. They are also learning coding vocabulary words like Loop, Conditionals, and Events. They are very creative with their coding and it's wonderful to watch them help each other!

Students are using Scratch, block based coding, to play musical notes, create a music video and build an interactive music display. Please encourage them to code at home in Scratch at scratch.mit.edu.



3rd, 4th, and 5th Grade STEAM



In 3rd, 4th and 5th grade, students learned about Hurricanes. Students learned how hurricanes are formed, about the eye and wall of a hurricane and how to prepare for one. They worked in small groups to design a house with a roof that could withstand the wind force (a fan) and the storm surge (water). They had to design and build using Popsicle sticks, tape, construction paper and Play-Doh. Several houses stood after our hurricane simulation! Students learned about Wheels & Axles and Friction, as well as how school buses are made. Students collaborated in small teams to build a school bus that rolls using limited materials: tissue box, 4 CDs (wheels), two pencils (rods), pipe cleaners and construction paper. Students added examples of vehicles with wheels and axles to Google Slides.

4th Grade STEAM



4th graders have recently started a unit in Engineering is Elementary on Rescue Aid Drop Packages. Students are engaged in creative problem solving to bring their inner engineer to life. Students are learning about the monsoon rains that cause severe flooding in Thailand which cuts people off from important supplies. Students are designing, creating and testing a variety of aid drop packages that protect important supplies. Each week they are given hands-on challenges to solve with delivering the packages while learning to collaborate, communicate, solve problems and share their solutions with their peers.

5th Grade STEAM



5th graders worked with littleBits, Strawbees, K'nex, Legos, Makedo and cardboard to solve a variety of challenges. They used the 4Cs of 21st century skills: Collaboration, Communication, Creativity and Critical Thinking to come up with their own inventions. They recently started a unit on JavaScript coding Apps using Bitsbox. Students have recently moved from block based coding to text based coding to code apps. Students are learning coordinates and basic commands, fundamental computer science concepts. Students are working through coding a variety of apps with help, working their way up to coding their own apps based only on an image and description of the final product. They are having fun while learning!