RUTHERFORD

Bits and Bytes

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Inquiry

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Grade 1 & 2 Enrichment

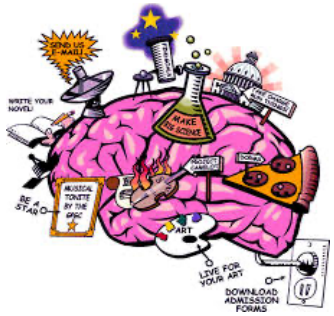
First and second graders have been extremely busy in Enrichment class. Students were very excited about meeting our "thinking mascots" and learning how to think in a variety of ways like our animal mascots.

One of the highlights that was completed earlier this year was to have first graders design and build a "spicycle" which is a bicycle for an eight-legged spider. Using classroom supplies and imagination they were able to create some very unique models that our spider friend was able to ride safely.

First graders have also been taking on a variety of challenges using fairy tales and nursery rhymes. They were given the task to create a parachute for Jack (and the Beanstalk) so that Jack could land safely on the ground. There were a variety of constraints put into place as they had limited supplies and time to complete it.

Second graders completed a variety of inventions with varying degrees of difficulty. Our most extensive project was an invention that required the use of a cardboard tube as one of the materials. After saving hundreds of cardboard rolls, students got to work and were very clever with their blueprints and final products. Each student created an invention that told how they worked, materials that were used and what problem it solved.

Second graders spent a few class periods learning and solving ***Sudoku*** puzzles. Once they started to perfect the puzzles using paper and pencil, they tried a few out using the Chromebooks. Students also became familiar with logic elimination grids and getting rid of all of the wrong answers to be left with what was correct. Students thought logically about each clue given and were able to solve the grids like experts.



Grade 3 Discovery

Discovery Class at Lincoln and Washington Schools began the year with a unit on self-reflection and self-discovery. The students reflected on their lives and talents and began writing an autobiographical piece in an untraditional way and created an autobiographical silhouette. The students enjoyed becoming acquainted with each other through their conversations and presentations.

Discovery students had the opportunity to create some very unique sculptures using materials with many constraints put into place. Students needed to make sure the sculpture was three-dimensional and could stand alone. Projects came alive as students shared each one and gave detailed information about the inspiration for the project idea.

In the Fall, we were lucky to visit the Grounds for Sculpture in Hamilton, NJ as a culminating activity for the sculpture unit.

Third graders in both schools downloaded the WeDo 2.0 app onto Chromebooks and followed the procedures for building and coding the model, Milo the Science Rover. Once this initial task was finished, the students synced their LEGO hubs to bluetooth and then coded their models to move. Lastly, the students researched and reported on a given topic. Students worked independently building and coding another LEGO model to coordinate with their own topic of study. Additionally, all of the classes learned about speed, volcanic eruptions and why it's important to have a base on the moon through the LEGO activities. A few students went on to find out about the use of prosthetics

We, once again, hosted an Open House for each of the Discovery classes. Parents were invited into class so the children could showcase all of their projects from the entire year. We were all excited to see what was accomplished and the growth that the class made in such a short time.

Pierrepont School – Amanda Almaliah
All Grades

What a wonderful year it has been!!! 2023-2024 brought new changes and a fresh facelift to Gifted and Talented at Pierrepont. Over the course of the 2022-23 school year, I was busy dreaming up and writing new curricula for 4 new classes in each grade level. All of that hard work paid off when I was in the middle of my 6th grade Philosophy class in October, and looked out into my classroom to see students passionately debating ethical dilemmas backed by critical thinking and reasoning. Even more so, I was filled with absolute joy when I started hearing, "I asked my dad this question over dinner, and..."

Some units were based on years of teaching similar content while some were brand new to me. Kamishibai (the art of Japanese street storytelling) was an amazing addition to our 4th grade studies and a fun way to start off the year. Ending the year with my 5th graders creating board games and escape rooms was equally as fun and challenging.

Next came the Noetic Math competition. We prepared weekly by solving math problems. The competition was tough, but I saw everyone persevere and many students made honorable mention and a couple even earned TOP HONORS!

Instead of a learning fair at the end of the year, it was great to invite parents to Open Houses at

the end of the marking periods (where/when applicable) to see the work their children had done in that unit. I look forward to continuing this next year and to having parents see our work in action!

We will continue these adventures next year, with a few tweaks, as I learn how to use these units to challenge my G&T students. The best part of all of it was getting to see my students every day!

4th Grade – Inquiry

Fourth grade started out with Kamishibai. We first learned about Japanese culture and then the art of storytelling. After reading some famous Kamishibai stories, students were grouped in teams of 3 to create and illustrate their own story. Once they completed this task, from rough draft to final, we shared our stories with our families and also with some lucky Lincoln School classes.

Next, we spent a little time practicing creativity, critical thinking and logical thinking; skills that are the basis of much of what we do in class. In our Decathalon unit, we split the 10-week marking period into 2 weeks of practicing a variety of skills. Students tackled brain-busters ranging from ***Sudoku***, to creative writing, magic squares, matrix logic puzzles, anagrams and rebus puzzles (just to name a few!)

We then jumped right into our theme of ecology. Students began to understand habitat and environmental problems that threaten animal species. They each researched food webs, habitats, and ecosystems. Following this, students began reading ***Who Really Killed Cock Robin?*** by Jean Craighead George. Through reading the story, students continued to learn about human impact on the environment and thought about ways we all can make a difference. In this interdisciplinary unit, students learned about the chemicals used in our daily lives and how pesticides and insecticides affect an entire food chain.

Lastly, we acted on the lessons we learned through our novel by becoming ecological engineers. By building windmills, engineering water filters and designing solar pizza ovens, students saw how hands-on making a positive change for our environment can be. The highlight of our year was the field trip to Tenafly Nature Center where the students got to see these habitats first hand and study with an environmentalist. Hopefully, they were inspired to be the change we need in the world.

5th Grade – Inquiry

Fifth graders worked cooperatively all year to learn, problem solve and brainstorm to generate ideas.

We started the year off with architecture and design. Working in small groups, students learned about the shapes involved in design and the differences in architectural styles. They then used this knowledge to design and build a home featuring that style and presented their designs in a small presentation.

We then moved onto Finding Justice, our law and mock trial unit, which found our students immersed in law, ethics and what is morally right or wrong. We completed in-class exercises which asked students to think about scenarios through the lens of the law. We finished the marking period with two large group jury trials

in which our students role played as lawyers, witnesses and juries.

Next, we moved to space; figuratively, of course. We learned about the Race to Space and why the United States started NASA. Students each picked a different topic related to space and presented a lesson to the class about their topic. Lessons were taught through many creative means such as videos, interviews, dioramas, games and slideshows. Students learned facts about the moon, the International Space Station, black holes and the layout of the different space shuttles. Within this unit we worked on ***Things that Fly*.**

After studying the forces of flight, students worked in small groups to create a glider and learn about aerodynamics and flight. While seemingly easy, this difficult challenge required students to construct a glider that actually glides. The best part of this challenge was not in the design, but in the problem solving when almost every team realized there was something they needed to improve upon and redo. We followed the design process and quickly began to understand why there was learning in making mistakes. We finally had our final test run in the multipurpose room and analyzed what we could do better if students had time to continue to redesign.

Switching gears, we brought our sights down to Earth for our next unit on the ins and outs of game creation. Their first adventure was a problem-based learning group project where students worked in small teams to create a board game after learning the different mechanics of board games and what makes them challenging and age appropriate. They had to develop themes, rules and pieces. To present their games, they each played with their classmates and critiqued. Lastly, we worked as a group to create a classroom style escape room. After having visited an Escape Room for our field trip, students were aware of the complexities of not only "getting out," but also how many pieces of a puzzle there are to create one. Together we created a theme, figured out puzzles and created an escape room to challenge my 4th graders!

6th Grade – Inquiry

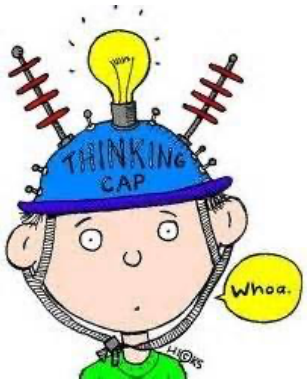
Sixth graders started off the year questioning everything in our Philosophy unit. Things are never as easy as they seem, as we dove deep into ethical and moral situations, probed dilemmas with critical thinking, and persevered to explain our views to others. Students had their questioning and inquiry skills sharpened and practiced deductive reasoning all through classroom activities that seemed more like games than hard work as we read through a philosophical story where our characters questioned everything.

Continuing on in the year, we started ***Challenge Math***. In this unit, students had to "see" what math is all about as they developed problem-solving, visual-motor, and creative thinking skills with this series of challenging and fun projects. Using ordinary classroom materials, students worked alone or in small groups to design flat patterns that fold into everyday three-dimensional objects such as a house, bookcase, or chair. Each project grew in complexity from basic to advanced, and built on one another as they progressed.

Then we jumped into our most physically challenging and most complex unit, our ***Rube Goldberg Machine***. This open-ended challenge employs the engineering design process with the purpose of putting toothpaste on a toothbrush. Students had to first learn about the five simple machines, and then using those as a basis, created more complex machines as steps in a chain reaction to get to their end goal.

Lastly, students grouped together to participate in a multi-school competition called ***Boom or Bust*** sponsored by the Bergen County Consortium of Teachers of the Gifted. The multi-step, small group task was to create a food truck, design a marketing plan, menus, budgets, social media, etc. to market a well-rounded business suitable to procure a "loan" from the judges.

On Monday, June 10th, 24 students from Rutherford and other GT teams from Bergen County met at Valley Middle School in Oakland for the competition. After outstanding presentations and careful deliberation from the judges, Rutherford's GT Grade 6 students took home trophies for two of the three categories and a third team won honorable mention. Ramen Haven, won the top award – and the "loan" from the judges. Congratulations to our students for all the hard work and great presentations!



Note from Dr. Velechko
G&T Coordinator

Even though formal education concludes in June, G&T students should be encouraged to read, visit museums, play games and create!

Have a great summer!!