



Bits and Bytes

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Washington and Lincoln Schools **Jennifer Augusterfer**

Grade 1 & 2 Enrichment

First and second graders have been extremely busy in Enrichment class. They have been studying the five brain exercises of listen, think, imagine, remember and observe. We try to utilize all of these exercises in each of our weekly class lessons. The first graders recently completed a unit on inventions. First graders had the opportunity to design and build a “spicycle,” which is a bicycle for an eight-legged spider. Using classroom supplies and imaginations, they were able to create some very unique models that were on display in our classroom. First graders also worked like detectives to solve a variety of puzzles. Students had to use deductive reasoning and logic elimination to identify the mystery animals that were discussed in class.

Second graders completed a variety of inventions with varying degrees of difficulty. Our last, and most extensive, was an invention that needed to use an empty toilet paper roll. After saving hundreds of cardboard rolls, they went to work and were very creative with their blueprints and final product designs.

Second graders spent a few class periods learning how to solve Sudoku puzzles. Once they started to perfect the puzzles using paper and pencil, they tried a few out using the Chromebooks. Each student was able to log in to their **Google** accounts, enter the **Google Classroom** and solve a variety of Sudoku puzzles that were posted for them.



Grade 3 Discovery

Discovery Classes 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. They began writing an autobiographical piece in an untraditional way. The students enjoyed becoming acquainted with each other through their conversations and during their presentations.

Pierrepont School - Amanda Almaliah

Grade 4 – Inquiry

Discovery students had the opportunity to visit the Grounds for Sculpture in Hamilton, NJ. To prepare for our trip, the students investigated the backgrounds of the featured artists and their work. Once we returned, the students brainstormed ideas and created some very unique sculptures using a variety of classroom materials. Students completed a **Google Slides** Presentation explaining the inspiration for his or her own sculptures and how it evolved. Their presentations came alive as the children added some fun graphics and sound effects to accompany their work.

After receiving a Rutherford Education Foundation grant for LEGO kits, students utilized the kits for a challenging and rewarding task. 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 a prosthetic hand.

This spring, students are learning to sew. Each child in Discovery will be sewing their own felt square with symbols to represent their family history. The completed project will accompany some research about the country where their family originated, a family tree and a family story. All of the information will be presented to the class, along with a show and tell item! We are excited to learn more about each other.



It was so exciting to meet the new Fourth graders in September! We spent some time discussing the rules of the classroom with an emphasis on brainstorming, collaboration, creative and critical thinking. We talked about growth mindset, which is emphasized school-wide, but is also especially important for gifted students. Students brainstormed, planned and created mini-me posters that had a personal goal to become better at something important to them.

Once this self-exploration was complete, we examined our connection with the environment. As the environment becomes an ever-increasing matter of national and international importance, students' knowledge of ecosystem dynamics gains in value. We started out learning about pollution, garbage and our carbon footprint. We discussed biodegradable, and non-biodegradable materials, how plastics will NEVER go away and how they are growing in mass numbers in the Great Pacific Garbage Patch. We furthered this environmental journey by studying renewable and non-renewable resources and building passive solar houses in teams. It was definitely difficult to keep our homes warm in the chilly winter classroom, but our teams worked well together to problem-solve and use materials and "sunlight" to warm the homes.

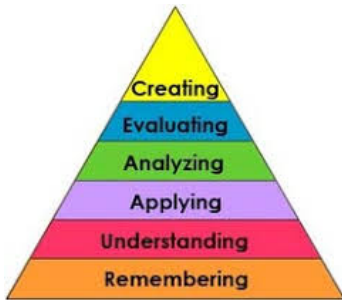
In an effort to display that recycling isn't always the best solution, and reusing is always an option, students literally thought out-of-the-box, and created a project using materials they brought in from home. Their inventions had to clean up the environment. It was amazing to see the ideas they came up with!

Following this project, students began reading *Who Really Killed Cock Robin?* by Jean Craighead George. Through reading the story, as well as a variety of research, hands-on experiments and creative thinking, students continue to learn about human impact on the environment and think about ways we can make a difference. In this interdisciplinary unit,

students learned about the chemicals we use in our daily lives and how pesticides and insecticides affect an entire food chain.

In our final unit, *Endangered Animals*, students will learn all about why animals (and plants) become endangered and extinct. They will take part in a final project where they become *Animal Experts*, researching an endangered animal and its habitat. Learning about animal adaptations and creating their own adapted animal, as well as origami animals, will complete the unit.

Our field trip at the end of the year will be a great one. Students will visit the Flat Rock Brook Nature Center. Using their deductive reasoning, problem solving and cooperative skills that we've practiced all year long, students will participate in two programs- Group Challenge and Pond Ecology, fitting into our year-long theme of self-discovery, growth mindset and nature.



Grade 5 – Inquiry

While the Fourth grade was focused on fostering independent and creative thinking, Fifth graders began to work cooperatively to solve problems and learn how to brainstorm to generate ideas. Our theme this year, while heavily centered on space, is about travel and expedition.

We started the year off with our “Bring me to your leader” exercises which focused on goal setting and positive character traits. We learned about the astronauts of STS 51L (The Challenger Flight) and the Race to Space. We learned facts about the moon, the International Space Station, the layout of the different space shuttles and the effects of space travel. We researched independently and in small groups,

watched *Apollo 13*, and created Mission Patches for our upcoming trip.

To further prepare the students for their trip to the Buehler Challenger & Science Center, students participated in activities that were designed to prepare them for tasks they undertook during their culminating simulated space mission, *Return to the Moon*. They made paper airplanes, following nothing but oral directions; engineered Moon Rovers; and worked on a plethora of communication challenges. Needless to say, we had a great time on our field trip and everyone was excited about our successful mission.

Fifth graders continue to work cooperatively while they participate in a Problem Based Learning challenge, *Space: The Final Frontier*. Making decisions as a group, without my outside help, students have to form a colony on a new planet that could be replicated by others when the Earth meets its timely end. It sounds scary, but students have been able to band together to pack up their space shuttle, create flora and fauna in their new habitat, build a colony to work and live in, and make decisions as a group. I'd follow them to their new planet!

Lastly, students will have a great time in the *Things that Fly* unit. They will be building rocket-based propulsion systems designed to take food to islands devastated by a hurricane. Then, they will work in small groups to create a glider and learn about aerodynamics and flight. While seemingly easy, this difficult challenge requires them to construct a glider that actually glides.



Grade 6 – Inquiry

The Sixth graders found out first hand that, “there is nothing like first-hand evidence” as this year’s theme is *Becoming a Detective*. Things are never as easy as they seem this year, as we started off with tests of observation, critical thinking, and perseverance. They had their questioning and inquiry skills sharpened and practiced deductive reasoning all through classroom activities that seemed more like games than hard work.

Students became experts in handwriting analysis, fingerprinting, trace evidence, and chromatography during their field trip to the Meadowlands Environmental Center where they worked as Crime Scene Investigators with other gifted students from Bergen County. Practicing Matrix Logic puzzles and breaking out (escape room challenges) add to the challenge and excitement while sharpening their problem-solving and logical thinking skills.

We furthered this theme through literature as we read about Sherlock Holmes in *The Adventures of a Speckled Band*. We solved some picture puzzle crime scenes to lighten the mood and keep our skills of observation sharp. Then students wrote their own mystery stories and shared them in class. The process was daunting, but with some peer editing and a classic “who dun it” plot twist, our Sixth graders produced some amazing literature fit for campfire storytelling.

We then moved on to the world of cryptography. Understanding ciphers from the time of Caesar to breaking mathematics based ciphers such as the Affine Cipher, students really rolled up their sleeves to decode these messages. Once we reviewed a variety of ciphers, they choose one (some even made up their own) to create a coded message and try to stump their peers.

Lastly, students will work independently or in small groups as entrepreneurs in our final unit, “Shark Tank.” They must decide on a problem, create a solution, design, and pitch it, in hopes of winning the *Rutherford Riches* (a fictitious

grant for budding inventors.) Students must work quickly to do what investors take years to do... come up with the next million dollar idea!

Learning Fair

On June 4th, students from the Grades 4-6 Gifted & Talented Program will be exhibiting selections of their work at the Gifted & Talented Learning Fair in the Pierrepont School gymnasium room from 6-7:30pm. All invited!

