THE BYRAM HILLS CENTRAL SCHOOL DISTRICT MAGAZINE SPRING 2023 | VOL 60, NUMBER 2

SPECTRUM

A COMMUNITY OF LEARNERS COMMITTED TO EXCELLENCE

HANDS-ON K-5 EXPLORATION
OF ENVIRONMENTAL SCIENCE GRANTED BY THE BHEF

SPEAKING THE LANGUAGE OF MATH
AT COMAN HILL ELEMENTARY SCHOOL

AFTER-SCHOOL OPPORTUNITIES
AT WAMPUS ELEMENTARY SCHOOL

INDIVIDUAL INVESTMENT TIME
AT H.C. CRITTENDEN MIDDLE SCHOOL

STARTUP TAKES OFF
AT BYRAM HILLS HIGH SCHOOL

GIRLS VARSITY TENNIS STATE CHAMPIONS
HISTORY MADE AT BYRAM HILLS

SAMANTHA MILEWICZ
NATIONAL REGENERON RECOGNITION

THIS PUBLICATION IS PART OF THE BOARD OF EDUCATION'S CONTINUED COMMITMENT TO COMMUNICATION, FOUNDED 1961

Top: Students at Coman Hill Elementary School had the exciting opportunity to touch a turtle during a session on adaptations. Bottom: Wampus Elementary School students enjoyed a lesson on forces and interactions.

BHEF GRANT BRINGS HANDS-ON EXPLORATION OF ENVIRONMENTAL SCIENCE TO YOUNG LEARNERS

Elementary school students touched the shell of a large turtle as they learned about adaptations. They peered into an enclosed case to look at frogs during a lesson on the tropical rainforest.

Students used their senses to test the weather conditions and learned about food webs, map making and erosion. They studied earthworms in the dirt and also met a hedgehog.

This year, students at Coman Hill and Wampus elementary schools are immersed in a K-5 Environmental Science Program that offers project-based learning experiences that enhance the curriculum in the area of environmental science.

Thanks to a generous grant from the Byram Hills Education Foundation, five in-depth, interactive sessions are being held throughout the school year in each classroom with a naturalist.

"We're giving our students a deep, hands-on exploration of science around the theme of environmental topics," said Deputy Superintendent Dr. Tim Kaltenecker, who developed the program with PNW BOCES.

"We want to excite our young students about science, get them interested in discovering science and allow them to see how science connects to other disciplines," he added.

The program allows students to learn about the Earth's natural systems, understand the natural world around them and make connections between their actions and a healthy environment, society and economy.

In the classes, students develop and practice skills used by scientists, like asking questions, carrying out investigations and evaluating their findings.

At Coman Hill, the February lesson for kindergartners focused on frogs, snakes, toads and turtles as they learned about the adaptations of reptiles and amphibians. Students learned about the animals' different physical characteristics, and how they move, eat and protect themselves.

At Wampus, third graders studied the tropical rainforest in February. They learned about the different layers of the rainforest, the amount of sunlight in each, and the crops that grow and the animals that live there.

In an earlier lesson on erosion, second graders studied the connection between weather and erosion and created a village out of sand that could survive erosion from the force of water.

"They were able to explore how to prevent erosion and then test their own design based on what they learned," Dr. Kaltenecker said.

The K-5 Environmental Science Program prepares students for the New York State Science Learning Standards, which will include a new state test for fifth graders next school year.

Throughout the year, students have participated in hands-on learning activities, listened to stories related to the content, observed live animals up close and completed projects related to the science topics.

Students have been enjoying the classes.

"I love them because we learn about how to help the environment and how we can save the environment," third grader Patrick Donovan said.

For his classmate Mira Pinto-Jain, the activities are her favorite part, including the use of magnets to pull metal objects from sand.

Sammy Kafko, another third grader, is happy about the environmental science program because "I get to learn so much more about science."

In kindergarten, Leni Hason likes the classes and enjoys the "drawing and the learning."

"We learned about the environment and the weather," which she said she knows are important areas to study. "It's cool to learn about them."

COMAN HILL STUDENTS ARE LEARNING TO SPEAK THE LANGUAGE OF MATHEMATICS

On a January day at Coman Hill Elementary School, kindergartners rolled special dice and found different ways to fill an empty hexagon on their game board with smaller shapes. The room was buzzing as they took turns playing; the young learners were having fun.

After playing the math game, students shared the various combinations of shapes they used: two trapezoids, one trapezoid and three triangles, and two rhombuses and two triangles. “All of you found such amazing ways to fill a hexagon today,” said their teacher, Devin Steinberg.

When the youngest students in the District study mathematics, they are immersed in a hands-on, language-rich, collaborative program called Investigations, which is based on conceptual learning, discovery and exploration.

“Students are investigating problems all throughout their day in the math lessons,” Principal Peggy McInerney said. “They investigate problems through math games and story problems that are accessible to all students. There are many cooperative learning games that can be adapted to go deeper into a math concept.”

The students are gaining a strong foundation in math by developing an understanding of numbers and learning the concepts behind the different mathematical procedures like addition and subtraction, rather than memorizing how to solve problems.

Through Investigations, students learn the vocabulary of math. Just like the alphabet has 26 letters used to make words, students learn the digits 0-9, which make up the Base 10 Number System and are used to construct numbers.

“We’re talking about the language of mathematics,” Mrs. McInerney said. “Numerals have no meaning without context behind them. The Investigations program supports the development of language and mathematical thinking.”

Students learn flexibility with numbers and that there is more than one way to solve a problem. Students may participate in math discourse, or talking with classmates about how they solved a problem and making connections related to the concepts. These discussions help students solidify their learning, learn from each other and build confidence.

“Through conversation, students develop a greater awareness of mathematical thinking, strategizing and solving math problems,” Mrs. McInerney said.

Students at Coman Hill are building a depth of knowledge that will prepare them to continue their math studies through Investigations at Wampus Elementary School, and in middle school, high school and beyond.

“When students learn the concepts first, higher level mathematics is easier to understand and students do better,” Deputy Superintendent Dr. Tim Kaltenecker said. “When they start learning efficient ways to solve complex problems, they will understand the reasons behind the procedures.”

Students use many tactile objects, like cubes, shapes and counters, and also express math concepts through drawing. Ms. Steinberg says her young students are learning through exploration and play.

“It’s not just teaching to complete a worksheet,” she said. “The program gives students a whole-body math experience. It’s not just thinking. It’s moving manipulatives around and figuring it out, and that leads to a deeper understanding of math.”

Her students are excited to learn. “They’re smiling, they’re happy and they’re cheering each other on,” Ms. Steinberg said.

It’s a familiar sight throughout the building.

“The children love the math program because they don’t even know they’re learning,” Mrs. McInerney said. “A really strong curriculum should be fun and engaging and full of learning at the same time.”

Kindergartners at Coman Hill Elementary School had a blast playing a math game involving hexagons. The Coman Hill math program is a hands-on, language-rich, collaborative program.

Students at Wampus Elementary School are immersed in three engaging after-school programs.

WAMPUS IS BUZZING

WITH ENGAGING AFTER-SCHOOL ACTIVITIES

At Wampus Elementary School, students are getting a head start on homework. They are learning about the French language and culture, playing math games or creating art in a new way. They are pitching in on a community service project.

And, it's all happening after the school day is over.

Students are excited to be participating in three engaging after-school programs this year: A new Homework Center for fifth graders, a revitalized Wampus Extended Learning Program for fourth graders and a reenergized VIP Jr. program for fifth graders.

"We are always striving to help our students become confident, independent learners and prepare them for middle school," Principal David Mack said. "These after-school activities offer students more opportunities to gain confidence. Our students are happy to be here for these programs and take great pride in being a Wampus student."

The activities, held on Tuesdays, also strengthen the Wampus community as students participate with peers from other classes.

A look at the programs:

The **Homework Center** is open every week and is run by fifth grade teacher Heidi Marchesini. In a calm, focused environment, students can receive extra help with classwork or homework, get help with organization, do homework alone or with a friend, and read independently or play educational games.

"This is a quiet, relaxed space where students can do their homework and get one-on-one help without feeling the pressure of being in a classroom," Mrs. Marchesini said. "It can help reduce stress at home, where there are more distractions. Here, they are still in the mindset of school."

Severin Jousse attends most weeks and appreciates the opportunity because "you can have help with your homework in case it's frustrating you."

"You and your friends can help each other," he said. "You don't have to be on a call with each other. You're there in person and the teachers can also help you."

The **Wampus Extended Learning Program**, or WELP as it's called, offers three classes that are repeated in three sessions: World Cultures, which teaches students about different cultures and world languages; Mathematical Relationships, which focuses on fourth grade math skills through engaging games and critical thinking puzzles, and a new class this year, The A in STEAM: Visual Art, in which students explore a variety of materials and may create artwork in unconventional ways.

"The teachers are going in-depth in their subjects and students are thinking deeply," said WELP adviser Liza Devaney, a Wampus literacy specialist. "Students are engaged, working in small groups and going very deep into their topics. You can almost see their thinking."

Fourth grader Isabella Moyano enjoyed playing math games in Mathematical Relationships and said it was helping her math skills. "I love it," she said. "It's amazing and it's so educational. I feel like I have an excellent tutor. It's really fun!"

The fifth graders in **VIP Jr.**, a volunteering and community service club, have been busy with service projects, including making Veterans Day posters, creating a bulletin board thanking the members of the Wampus community for making a difference and bringing cheer to residents of an assisted living community by putting on a talent show.

"The students are having fun but they're also very excited to help people and are learning that when you help others, you feel good," said VIP Jr. adviser and physical education teacher Doreen Cohen. "Their willingness to help others is so genuine."

Fifth grader Eleanor Mitchell said it feels good to be helping people and she realized that even a small activity can make a big difference. "I'm just happy to be making people happy," she said. "I like helping people, so I'm enjoying this."

AFTER SELF-REFLECTION, HCC STUDENTS SET ACADEMIC GOALS IN YEARLONG INITIATIVE

Just before Thanksgiving, students throughout H.C. Crittenden Middle School looked into their phones and Chromebooks and hit the record button. They read a personal academic goal aloud, making a short video to share with their families.

The videos are part of HCC's Individual Investment Time initiative. Earlier in the fall, students spent time during X Pod thinking of a goal, the reasons behind it, and how to work toward it.

Students were asked to choose a learning behavior or characteristic, like courage or resiliency, that will help them reach a desired outcome. Other learning behaviors included humility, flexibility, persistence, a growth mindset, risk-taking and listening.

The idea is to help students gain or strengthen lifelong learning skills rather than, say, getting all A's, and to deepen the connection between school and home.

"Our goal-setting work brings awareness to a skill or behavior that students want to work on and keeps that in the forefront for them throughout the year," Principal Kim Lapple said. "We asked the students to be reflective about who they are, a goal that is important to them and allowed them to determine how to achieve their goal."

Students chose goals they were committed to and that were attainable.

In sixth grade, literature teacher Kim Smith said she was pleased with the goals that her X Pod students set. While many students initially said their goal was to excel in school, she guided them to focus on a learning behavior that would help them grow as learners.

"They took to goal-setting really well and realized their own weaknesses and how that might impact their learning," Mrs. Smith said. "The students each picked a goal that suited them and that I agreed would help them achieve greater success in becoming a better student."

H.C. Crittenden Middle School students recorded videos on their personal academic goals. Here, sixth graders work on their videos during X Pod.

Sixth graders said recording a video will help keep them accountable and motivated.

Sixth grader Amaia Stein's goal is to pay more attention in class, and she's been working on it by not talking to her friends as much and by paying attention to what the teacher is saying.

"I think it's a good project because it helps you work toward what you need to do to be better and more successful in school," she said. "If we continue to make videos and I continue to see my progress, I think I will be proud of it."

Fellow sixth grader Omar Hussein wants to get better grades by being present and paying attention to detail. He will try to reach this goal by annotating, putting his finger on the text to show that he's being present in literature class, and by taking more risks in math by doing the optional problems of the week.

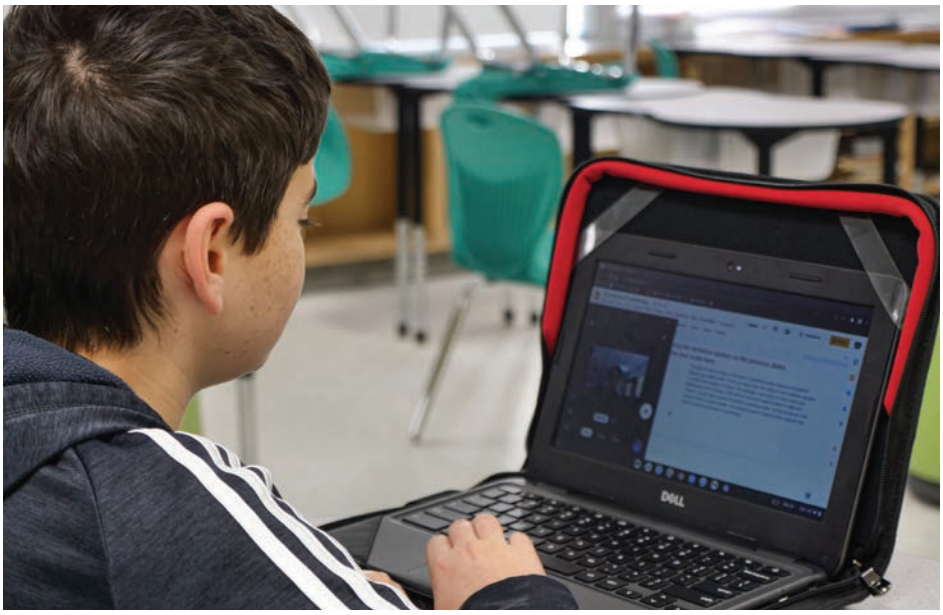
Omar said the videos are "a good way of communicating with our family members" and he thinks they will encourage students to work toward their goals. "It's a reminder for me to do those things."

"It's a good idea because it helps people think about the purpose of doing this work," he said.

Valentina Luna Garcia, another sixth grade student, said the project provides a push to reach the goal.

"It's fun to create a goal because then you actually want to do that goal," she said. "If I rewatch the video, then I could remember the goal more and then I'll really want to do that goal because of the motivation it gives me."

As students worked toward their goals during the winter, they documented their progress in a second video in February and will make a third culminating video in the spring on their successes and ways they can continue these important learning habits.



IN NEW BHHS COURSE, THE CLASSROOM BECOMES A BUSINESS INCUBATOR

Have you struggled to keep houseplants alive, suffered the sticky mess of a dripping ice cream cone, or spent too much time dragging the trash cans up and down your long driveway every week? And just for fun, wouldn't it be great if you could pack a portable pickleball court in your beach bag so you could play near the surf?

Help may be on the horizon as budding student entrepreneurs at Byram Hills High School work on these and other problems in StartUp, a new course for juniors and seniors that serves as a business incubator.

Students work in teams and create a startup offering a product or service and will compete for funding to invest in their ventures in May.

The goal isn't for students to necessarily launch the next blockbuster company, but to learn how to build a business and work as an entrepreneur, with a focus on compromise, collaboration, creativity, innovative thinking, risk-taking, learning from failure and navigating ambiguity.

"It's not Business 101, looking at case studies of successful companies," said Kelsey Smith, one of the StartUp teachers. "The students are doing the work themselves and figuring out if their idea is going to work. The ownership that students have taken over their businesses has been an amazing thing to see."

Students began by brainstorming problems, investigating whether people would be willing to pay for a solution, tweaking their ideas and gathering feedback. The 17 teams each developed a one-page business model canvas and are creating a prototype to test in the marketplace.

The students' creative ideas were on display at the bustling StartUp Expo on Dec. 21 in the library, where each team enthusiastically showcased their business.

There was an artificial intelligence-based trash can, a product to help break in cleats faster using steam, storage drawers that maximize the space under college dorm beds, apps for elder care and good sleep, and a restaurant bill payment system. How about the ice cream subscription service offering a sundae in a box each month?

Students are gaining practical skills and experience in this hands-on class, which can be taken for one or two years.

Junior Dylan Ettinger and his teammates developed a deck of cards with simple phrases in English and Spanish and a corresponding image to help tourists who don't have phone service or time to use an online translator.

"It's great, especially because I want to go into the field of entrepreneurship," Dylan said of the class. "It's good to get a head start."

Senior Tuda Odegi, whose team is creating an online resource for the care of houseplants, likes that she can apply what she is learning to her online business selling baked goods.

"This class is really special because of just how unique it is to the Byram Hills curriculum," she said. "I'm gaining a lot of skills about the business world and so many new things I never would have learned on my own."

Junior Austin Dorfman, whose team created a drip-proof ice cream cone, appreciates that the class - and the grades - are related to real-life experiences. "It's amazing to learn something in a classroom and then be able to go out for homework and go to an ice cream shop and say, 'What do you think about my idea?'" he said. "It's really awesome."

A key component is community involvement, said Dr. Andrew Taylor, the Director of Technology and Professional Learning who helped develop the class at Byram Hills.

Each team has a mentor, a member of the community with business expertise who meets with students every few weeks to offer invaluable advice. Community members also serve as coaches, who give one-time presentations on business topics. Other community members will judge the ideas at a pitch event in May.

Math Chairperson Lisa Pellegrino, the StartUp Program Coordinator, said everyone involved has been wowed by the class, especially the students.

"From the very first problem pitch to our mentors, to the expo, the students have been highly excited, energized and engaged," she said. "When the community sees the final product in May, Byram Hills will have marked its place again as a district that empowers students and develops leaders of the next generation."

The District is grateful to the Byram Hills Education Foundation for its support of the program.

Students in the new StartUp class showcased their business idea at the first StartUp Expo, which was held in the high school library.

GAME, SET, MATCH:
BYRAM HILLS GIRLS TENNIS TEAM NABS SECOND STATE TITLE

They did it again: The Varsity Girls Tennis Team clinched the New York State Public High School Athletic Association team championship for the second year in a row.

After an undefeated regular season, the girls were crowned the NYSPHSAA Division II team champs on Nov. 4 at the USTA Billie Jean King National Tennis Center in Queens with a 4-1 win over Cold Spring Harbor.

With that, the 2022 and 2021 Girls Varsity Tennis teams became the first two girls squads to win a state title at Byram Hills. The teams were the third and fourth overall to win a state championship at Byram Hills, which opened its doors in 1966.

The team event began in 2021, making the Byram Hills girls the sole title holder.

"The Byram Hills community is immensely proud of the Girls Varsity Tennis Team for this tremendous, history-making accomplishment," said Rob Castagna, the District's Director of Health, Physical Education and Athletics.

Just like last year after the inaugural win, the team was honored with a victory parade through Armonk in late November. Team members and Coach Michael Racanelli rode on a decorated vehicle that announced them as state champions.

Their float was preceded by emergency vehicles with celebratory flashing lights and sirens and a booming drum line. The Bobcat mascots added to the festivities and the girls were honored in speeches on the steps of North Castle Town Hall. The group walked to the championship sign at the intersection of Main Street and Old Route 22 and everyone cheered as the new entry, "Girls Tennis 2022," was unveiled.

Before the season began, the team was focused on capturing a second title.

"I encouraged them to believe that a back-to-back state championship was within reach if they worked hard, stayed together as a team, and chased their goal with a positive attitude and every ounce of energy they had," Coach Racanelli said. "The girls believed in that message, put in the work and made their dream become a reality."

Team captain Chloe Bernstein said that after losing nine seniors to graduation last year, the idea of repeating as state champions initially felt unattainable. "But with hard work and commitment to our mission, we were able to accomplish something that no other team in Byram Hills history has, and for that we are so grateful," she said. "Even though tennis is an individual sport, the key to the success of our team was understanding each other's strengths and weaknesses, to make tennis a team sport."

Also in the fall, Chloe, a senior, and Jenna Kleynerman, a sophomore, won the state doubles girls tennis championship. The Byram Hills duo beat the defending state champions from Port Washington, by a score of 2-6, 6-2, 6-4, to become the first girls in Byram Hills history to capture a state doubles championship.

In addition to Chloe and Jenna, the varsity squad was made up of Lily Anchin, Elizabeth Albright, Daphne Bernstein, Jordyn Bernstein, Anika Bobra, Allie Cooper, Dahlia Flores, Rebecca Geller, Dani Goldman, Justine Maresco, Lindsay Miller, Eliza Moy, Emerson Pace, Lila Raff, Romy Schweitzer, Skye Smith, Julia Soller, Allie Waxman and Ashleigh Weissman.

The District is grateful to the Town of North Castle for supporting the community-wide celebration and for installing a sign in town to celebrate Byram Hills State Champions!

Members of the state championship Varsity Girls Tennis team and their coach were celebrated with a parade through Armonk.

BYRAM HILLS CENTRAL SCHOOL DISTRICT
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Our Mission

In an environment of mutual respect, the Byram Hills School District and its community will provide students with the means, the knowledge, and the opportunity to excel in order to become productive and responsible citizens and leaders of the twenty-first century.

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BYRAM HILLS SENIOR WINS EIGHTH *IN PRESTIGIOUS REGENERON SCIENCE COMPETITION*

Byram Hills High School had an impressive showing in the renowned Regeneron Science Talent Search: Senior **Samantha Milewicz** won eighth place and a $60,000 educational award and four other students were recognized as top scholars for their original scientific research.

Samantha, as part of the Byram Hills three-year Authentic Science Research Program, was honored for her neuroscience research that could lead to innovation in traumatic brain injury treatment.

She was one of 10 students to win top prizes in the final round of the prestigious science and math competition, which was held in Washington, D.C., in mid-March.

"The judging process during finals week was extremely rigorous and to be named among the top 10 is an honor," Samantha said. "My research has the potential to help people, not only those suffering from traumatic brain injuries, but also Alzheimer's disease, Huntington's disease and addiction, and I am grateful that I have been given this national platform to share my findings."

For her research, Samantha used a novel 3D model containing cultured human cells to mimic the immune-response damage to the blood-brain barrier, the brain's protective layer, that occurs after a traumatic injury. Using several techniques, she demonstrated that inhibiting the overproduction of the protein MMP-9 restored healthy barrier function after a brain injury by preventing the breakdown of another protein in the barrier's structure.

Samantha was one of five Byram Hills seniors who were among the top 300 scholars selected in the first round of the contest. They each won $2,000 and Byram Hills received $10,000 to be used to enhance their research program.

Congratulations to these Byram Hills seniors for their impressive showing in the Regeneron Science Talent Search. From left in the front row, Lindsay Miller and Remi Matza, and in the back row from left, Samantha Milewicz, Rohini Das and Samantha Schaevitz.

The other Byram Hills scholars, who were announced in January, are:

Rohini Das, who created a software application, The Brain App, to quantitatively evaluate how adults store abstract concepts they experienced while playing a card memory game.

Remi Matza, who critically analyzed publicly available data on age-related macular degeneration, a debilitating eye disorder, to determine how the density, location and diameter of blood vessels in the retina change in these patients.

Lindsay Miller, who used a newly emerging technique called pupillometry to study aspects of human behavior by observing pupil responses to light. She was the first to find that these responses follow a 24-hour circadian rhythm, meaning they are influenced by the time of day they are recorded.

Samantha Schaevitz, who investigated the use of focused ultrasound with microbubbles as a method to improve brain cancer treatment by allowing therapeutic drugs to more easily pass through the blood-brain barrier, a protective layer for the brain.

This year, 1,949 students from 627 high schools entered the talent search. The competition, which dates from 1942, seeks to recognize the country's most promising young scientists.

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