

August 7, 2023

Dear Bayonne Public School Community,

On behalf of the teachers and administrators in the Bayonne School District, we would like to take this opportunity to congratulate all of the students (Grades 7 - 12) that participated in the Summer STEM Experience program at Bayonne High School. Students enrolled in the program completed classes in Mathematics, Physical Science, Computer Science, and Robotics. It was a pleasure to interact with students and staff as they completed various STEM activities throughout the duration of the program and even more rewarding to see the students make lasting friendships along the way.

Students that participate in summer learning programs will be better prepared for advanced courses in the STEM fields and will always use the key skills on which the Summer STEM Experience was built: collaboration, communication, creativity, and critical thinking.

As a district we have many opportunities for students to engage in Science, Technology, Engineering, and Mathematics in an after-school setting. Pay special attention to announcements for Math Olympiad, Project Innovate, Junior Robotics, STEM Research, and Computer Science in the upcoming school year.

Please join us in reviewing the articles that highlight the journey of the Summer STEM Experience students and faculty.

Regards,

Dawn Aiello
Director of Mathematics

Tara Degnan
Director of Science

Christopher Romano
Administrator-in-Charge

Computer Science

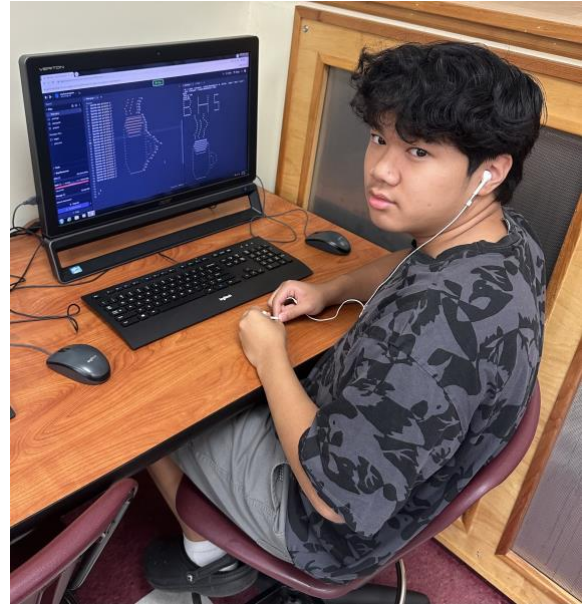
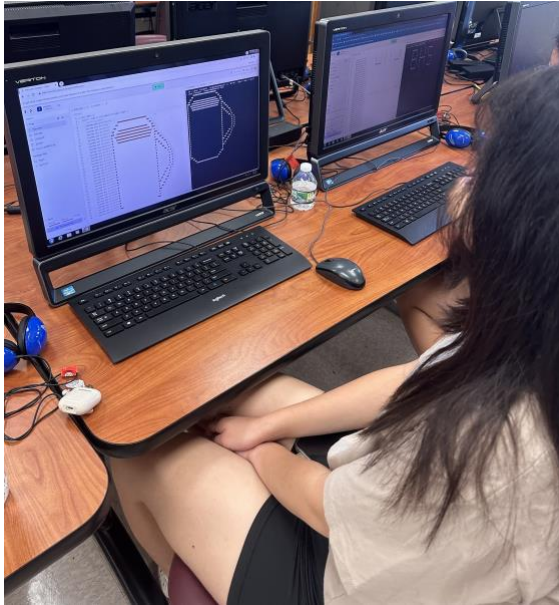
Student Clara is working on her first type of coding with Khan Academy Hour of Code. She is learning basic Java computing language and using type coding to design and create the image of a snowman.



Karas, James, and Gokulakrishnan are using Tinkercad to design a 3D Model for 3D Printing. The students are using geometric shapes and 3D templates as well as a grid to design their models of a keychain of their style.



James and Lindsey are writing commands in the Java coding language. Using Replit, they are compiling a program that results in the Bayonne High School logo along with the Java Language logo of a mug.



Angel and Abdullah are using the App Lab features of Code.org to design a popular Cookie Clicking game. The students use block coding along with design features to create a fully functional game with audio effects and score keeping.

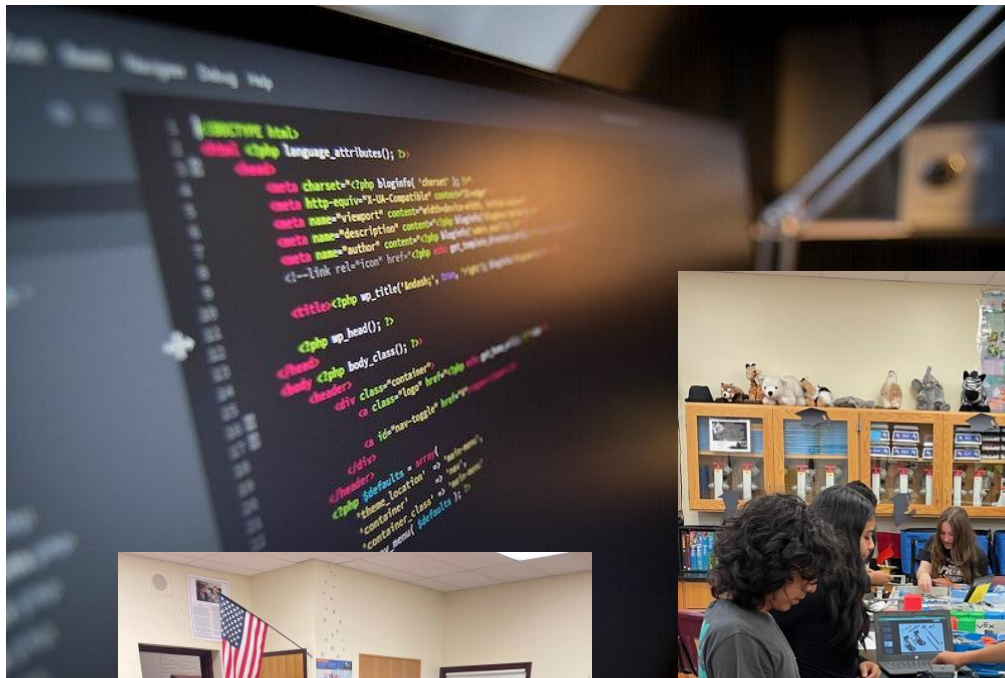


Students Code and Build in Robotics

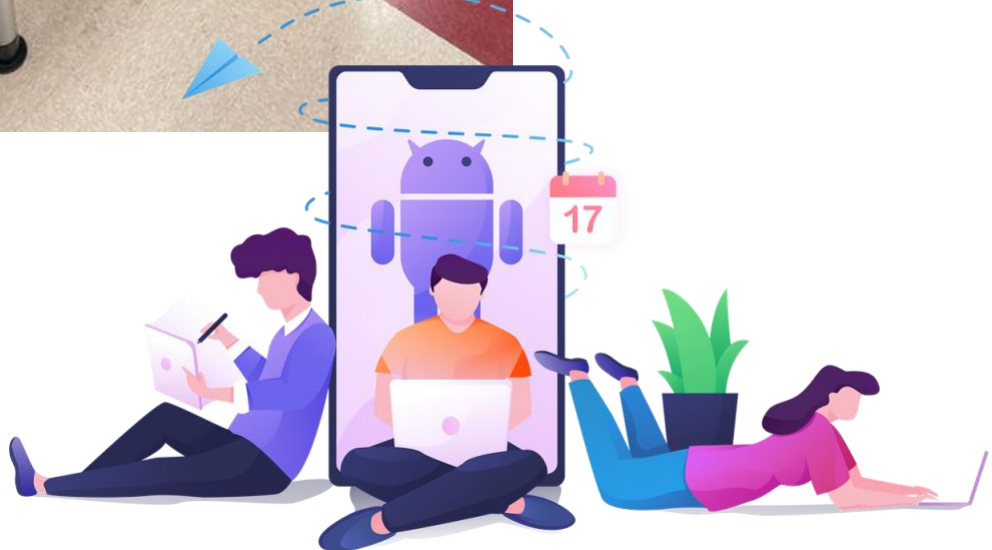
Students in the Robotics class of the Summer STEM Experience are working in teams to build and modify robots to compete in multiple challenges.

The groups are using VEX IQ Gen 2 kits as they build, test, and modify their robots to complete the cube stacking activity in weeks 1 and 2.

The teams will continue to complete several different challenges during the 4-week class with each one using a different basic robot build that the students will have to modify to score more points each time.

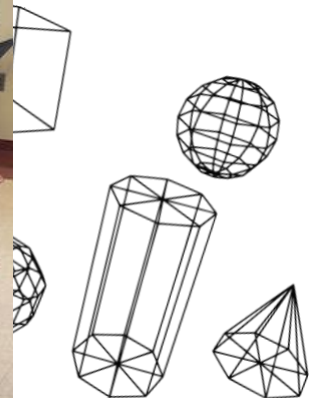
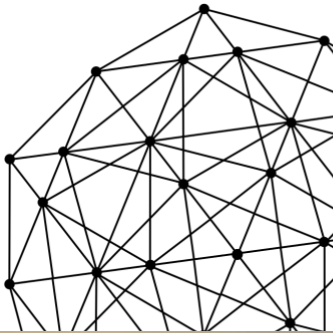


Students in the Robotics class of the Summer STEM Experience are continuing work on their robots. The students are working on one of three activities. Some are continuing working on the cube stacking challenge. Another group has started to work in VexcodeIQ to code their robots. The last group has been using their designs to compete in Battlebots. The designs of the robots continue to evolve to fit the challenge they are using their bots in.



Geometric Patterns

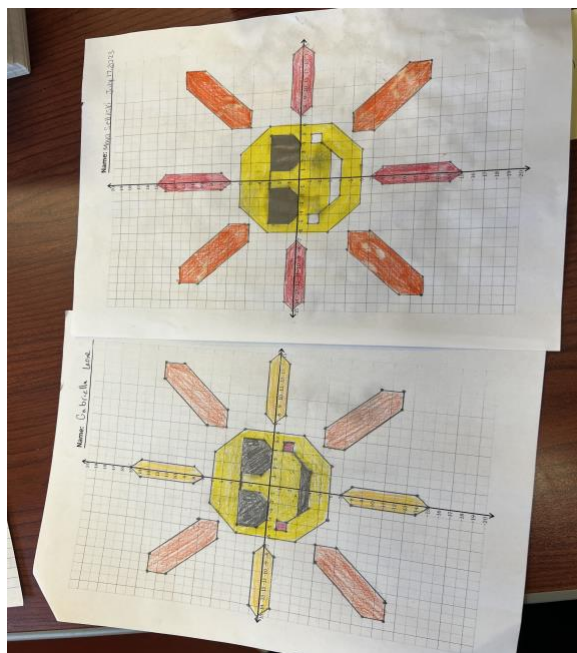
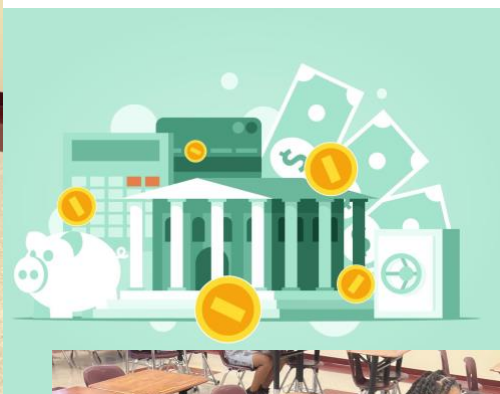
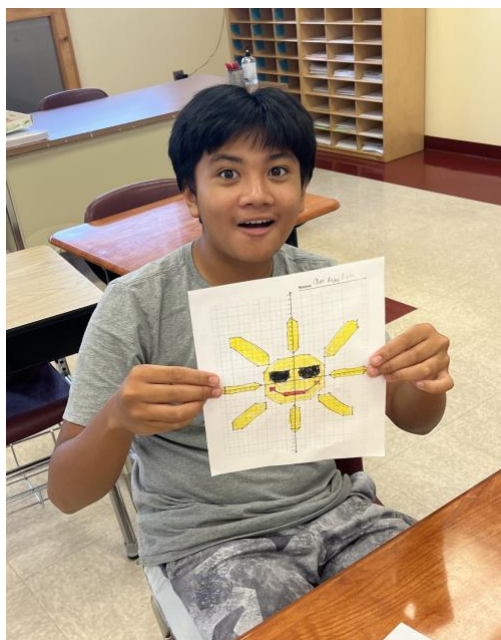
Summer STEM students enjoyed making tessellation projects in Mr. Smarz's Mathematics course! They first used an index card to design their own shape. The shape was later used to create a unique geometric pattern.





Financial Literacy

Summer STEM students completed their Financial Literacy budgeting project and worked on a Summer graphing activity in Mr. Smarz's Mathematics course! For the budgeting activity students were given a budget to plan a birthday, with a checklist of items to get. The students had to carefully search for the best deals and create the best party possible with their budgets. For the graph activity, students plotted points on a graph to uncover the mystery summer-themed image.



Roller Coaster Physics

In science class, students are learning about roller coaster physics through a hands-on project where they design and build their own paper roller coasters. Students utilize concepts related to kinetic and potential energy to help design and revise their ideas for a successful roller coaster trip. Students begin by learning about the different forms of energy involved in roller coaster physics and then brainstorm with group members on how to build the coaster. Students used an online roller coaster simulation to test whether or not their design would be successful. Finally, students can construct their paper roller coasters to bring their designs to life.

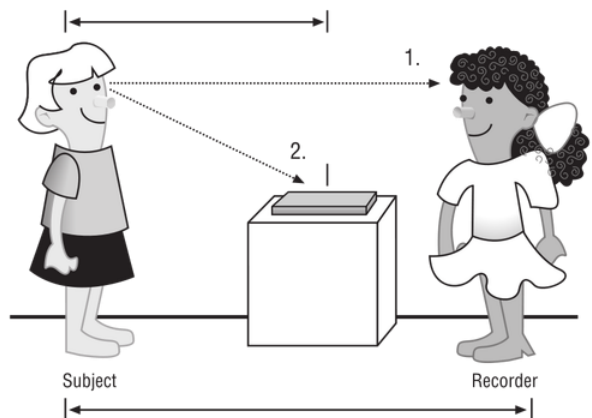
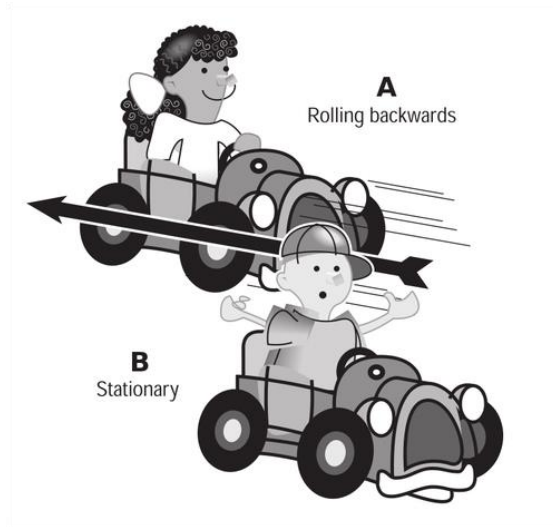


Balanced and Unbalanced Forces in Science

Students completed their paper roller coasters and used their knowledge on energy as they push, pull, and play their way to understanding force. Students completed hands-on investigations, each progressing in content, related to balanced and unbalanced forces and their effect on the motion of objects. They then used their observation of an object's pattern of motion to show how motion is predictable. Lastly, they used evidence from these investigations to show that people can use simple machines to accomplish tasks more easily.



Design, Build, Test - Force and Motion



Summer STEM Experience Team



Mr. Danny Ng
Computer Science, Gr. 8-12

Mr. David Henry
Engineering and Robotics, Gr. 8-12



Mr. Robert Smarz
Mathematics Gr. 8-12

Ms. Anam Tazhar
Science Gr. 8-12



Ms. Brittany Spann
Substitute Teacher/Administrative Assistant

Mr. Christopher Romano
Administrator-in-Charge



Henry E. Harris Community School

Maria Kazimir, *Principal*
Luisa Jaros, *Assistant Principal*

Philip G. Vroom Community School

Stacey Janeczko, *Principal*
Heather Zalis, *Assistant Principal*

Dr. Walter F. Robinson Community School

Karen Fiermonte, Ed.D., *Principal*
Areta Costello, *Assistant Principal*

Mary J. Donohoe Community School

Philip J. Baccarella, *Principal*

Lincoln Community School

Keith Makowski, *Principal*
Heather Zalis, *Assistant Principal*

Horace Mann Community School

Catherine Quinn, Ed.D., *Principal*
Evan Wexler, *Assistant Principal*

William Shemin Midtown Community School

James Pondillo, *Principal*
Nicole Morrow, *Assistant Principal*
Christopher Romano, *Assistant Principal*

Washington Community School

George Becker, *Principal*
Lisa Wasielewski, *Assistant Principal*

Woodrow Wilson Community School

Maureen Hurley-Brown, *Principal*
Tara Furmaniak, *Assistant Principal*

John M. Bailey Community School

Albert McCormick, *Principal*
Alana Ryan, *Assistant Principal*

Nicholas Oresko Community School

Charles Costello, *Principal*

Bayonne High School

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Frank Blunda, *Assistant Principal*
Lyndia Hayes, *Assistant Principal*
Eric Ryan, *Assistant Principal*
John Calcaterra, *Assistant Principal*
Monique Bullock, *Assistant Principal*
John Rickard, *Assistant Principal*

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