Engineering Design and Hands-On Building Projects

Most students are encouraged to design and build a variety of structures using recycled materials. Through these projects, they strengthen their critical thinking and problem-solving skills, practice recording data, and collaborate effectively in groups.

Students also explore the basics of architectural design and apply their learning to create products such as tree houses, hydroponic systems, Rube Goldberg Machines, waffle slabs (waffle structures), geometric straw models, and houses. Each project helps them build essential engineering skills while fostering creativity and innovation.

Feedbacks from students & parents 2024-2025:

Student Feedback

Grade 4 Student: "I love BG's class because I got to make a Rube Goldberg Machine using recycled materials. I had so much fun building it, and I was surprised that I could do something creative and exciting with everyday items. LOL!"

Grade 4 Student: "The math games helped us practice multiplication, and now we know the 7–12 times tables. We had fun playing and competing with other girls, and we even got rewards!"

Parent Feedback

"My daughters love the program. I've noticed real improvements in their attitudes toward math, science, and school because of the Girls Design Academy program. Thank you for all that you do—please keep up the amazing work."

"My daughter loves math, science, and more. She has shown a stronger interest and passion for these subjects with the help and support of the Girls Design Academy staff. Thank you."

More information, please contact:

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CITY OF NEW BEDFORD
Invest In Kids!
PROGRAM

Youth Program

GIRLS DESIGN ACADEMY

City of New Bedford

S T E A M

SCIENCE • TECHNOLOGY
ENGINEERING • ART • MATHEMATICS

What is Girls Design Academy About?

Girls Design Academy has been educating and guiding kids to develop STEAM skills (Science, Technology, Engineering, Arts, and Math) since 2016. We also teach techniques, academic support, and life & social development skills such as the necessity of strong social awareness, problem-solving, responsible decision-making abilities, developing self-confidence, positive youth development, and public speaking. Students also learned about health and wellness where students take part of sports, yoga and gym classes during the program.

Students will learn STEAM skills during the course of the program through hands-on activities, interactive prompts, workshops, science experiments, games, challenges, research, and the usage of laptops/iPads to complete assignments/projects.

Students are introduced to women who have made significant contributions in their fields to be able to see women not only be successful, but how they are make major contributions to our society. Our guests will be talking about their experience, effort and education. They will also have the opportunity to go on field trips and participate in science workshops from Mad Science, Rhode Island.

Snacks are provided by the school department as part of the program. We also have Family Events like Open House and Graduation.

This program runs all year long: After school program from September—May, Spring Break Week and Summer time: July—August.

The Girls Design Academy is Funded by the City of New Bedford & the Massachusetts Department of Elementary and Secondary Education.

PROGRAM INFORMATION:

WHO: Students from Grade 3-5

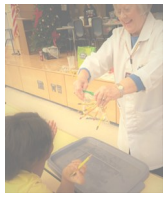
WHERE: Abraham Lincoln School
445 Ashley Blvd. New Bedford

WHEN: Tuesday — Friday
September 30, 2025 – May 28, 2026
2:30p.m. until 5:00p.m.

In the previous year, girls worked on different fun and creative projects using STEAM as the main focus.

In **math**, we used Investing 101, play a soccer math game to develop basic math skills, and we played challenging math-based games like Tivitz and sports math. Aside from applying their understanding to real-world activities like food shopping and trip expenses. Fortunately, the girls have access to the internet, which allowed them to practice their math skills by playing online math games such as Kahoot math, money, budgets and do research.

In science, students had the opportunity to discover and explore different topics using hands on activities such as Chemistry Properties of Polymers, Physics Bunny Catapult, DNA, Forces & Motion: Balloon Rocket Blast Off, and Forces: Let's Go Fly a Kite. They also discovered the difference between Elastic Potential Energy and Elastic Kinetic Energy. They discussed Newton's Laws of Motion and the relationship between motion of an object and the forces acting on it by planning, building, and conducting an investigation to compare the effects of air in the balloon rocket and the distance it traveled.



Another way that students learned about science, they participated in **Mad Science of Southern MA & RI**. Mad Science are hands-on / minds-on educational interactive science activities for 1hr. Students had the opportunity to participated on the following topics: Slime time, Radical robots, Movie effects, All about animals, Optical illusions, Lights, color, action and Space travel.

In **technology**, students learned about video editing, and film. They learned how to use computer coding languages to develop simple video games and phone apps. Scratch is a high-level block-based visual programming language and website aimed primarily at children as an educational tool.

Students visited New Bedford Cable Studio and created a Girls Design Academy STEAM tv show. They also learned about Pixicade™ which is an innovative STEAM program with an open-ended play pattern that is both physical and digital. Pixicade™ uses the video game design process to foster creativity and develop 21st-century skills. The game making process is fun, fast, and easy. Just Draw, Snap, and Play and watch your games come to life! Students can then edit, enhance, and share their games with others.

In **STEAM Plus Art**—students were introduced to artist Nathalie Miebach from MIT who creates 3D weaving from weather data. They also had an IPAD activity that presented a multitude of current visual data graphs used in business today. They created their own research questions, collected data, displayed data in a 2D bar graph and another graph of their choice, and did a representation of their data. Students designed a card and clay sculpture that demonstrates their understanding of a simple circuit.