long island **Explorium**
Children's Museum of Science & Engineering

A Children's Museum of Science and Engineering

Our distinctive challenge-based programs are built on New York State Science Learning Standards, New York State English Language Arts and Mathematics Learning Standards, and the National Core Arts Standards.

STEAM IT UP

Launching Learners in the 21st Century

The Long Island Explorium goes on the road. We bring smart and fun workshops to schools. We nurture children's thinking as they work to develop their own solutions to open-ended challenges.

Workshops include evidence-based writing, career awareness, and civic engagement components. Extended learning opportunities are provided to continue the exploration in the classroom and at home.

Professional Teacher Development

The Long Island Explorium is a New York State certified provider of Continuing Teacher and Leader Education (CTLE) credits. Our programs help inspire teachers to incorporate STEAM and constructivist approaches into their standards-based lessons. Teachers learn how to foster engagement of all learners through hands-on challenges that explore the engineering design process, encourage teamwork, and incorporate career and civic awareness.

Science, Engineering and Innovation Camps

We bring our expertise and innovation to your location. Our educators develop a series of workshops and activities. We customize to your needs. Students always leave asking for more! These STEAM camps are highly popular during school breaks and for energizing students during the year.

LOCATION

Long Island Explorium. Our programs can also be hosted at your location.

COST

At your location:
$450 per 90-minute workshop (up to 26 students, $15 for each extra student); $425 for multiple workshops. Also included is a 15-minute introductory professional development session for teachers. Our workshops are BOCES reimburseable.

At the Explorium:
$15/student with a minimum of 20 students. A two-hour experience at the Explorium includes a workshop and time to explore exhibit areas.

To schedule a STEM workshop, STEM camp or professional development program, please contact:

Call: (631) 331 - 3277 or Email: aeriksson@longislandexplorium.org
Mail: P.O. Box 465, Port Jefferson, NY 11777

Visit our webpage at longislandexplorium.org

Workshop Offerings

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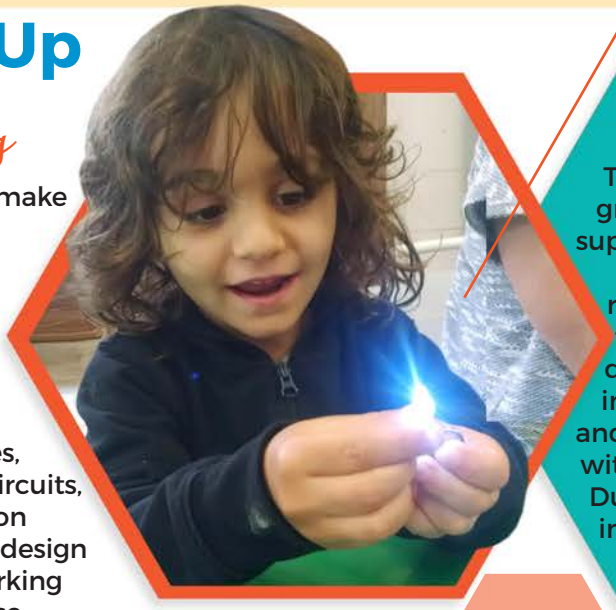
Light It Up
Electrical Engineering



The challenge is to make a beacon that will protect ships from a rocky shoreline. Students become "Makers" and electrical engineers as they explore circuitry. Using wires, gadgets, modular circuits, and safe construction materials, students design and construct a working beacon or lighthouse.

Little Sparks
A Pre-School STEM Experience

This program aims to spark creativity and gnite innovation in young minds. Research supported by the National Science Foundation shows that young children demonstrate a readiness and enthusiasm to engage in science, technology, engineering, and math thinking. Our distinctive challenge-based curriculum ignites an interest in the "big ideas" of science and critical and creative thinking. Our programs are aligned with the Next Generation Science Standards. During our 90- min. workshop, children will immerse themselves in hands-on learning in science, technology, engineering, art, and math. Let's think and build and invent together! This program is geared towards 4 year olds.

Bridging the Gap
Civil Engineering

Students learn about forces, strength, and stability as they build and test different types of bridges. They become civil engineers and are challenged to examine materials available to them in order to design and construct a bridge that will enable cars to safely pass across it and a boat to travel underneath it. This is a 2-day workshop for the primary grades and a 1-day workshop for intermediate.

Introducing MakerSpaces
in Classrooms

Introducing Makerspaces in the classroom is not only a wonderful way to align curriculum with the New York State Science Learning Standards, it is also and effective format to engage students in active learning. Although our workshops will primarily focus on science and engineering topics that are aligned with appropriate NYSSLS, makerspaces are useful to incorporate other disciplines such as English/Language Arts and Math which will be discussed. At the Long Island Explorium, we utilize a constructivist approach in our teaching and educational programs to create an active learning environment for students while they explore and construct an understanding of the world around them. This is geared towards educators in elementary and pre-K.

Measure, Make and Marvel
Color Chemistry

Working as color technologists, students begin with a quest to develop the perfect "green" for the Incredible Hulk, Shrek, or Fiona. While investigating the conservation of volume and concepts of scale and proportion, students predict, calculate, and measure additions and subtractions of volumes in order to create the perfect batch of color. Teachers can task students with finding other "perfect" colors to provide rich extensions to this workshop.

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Workshop Offerings

Squeaky Clean Water
Water Resource Engineering

Cleaning dirty water seems like an easy task, but it is a task that is filled with opportunities to construct, experiment, learn about controlling variables, gauge them, compute distance, determine particle size, and sequence a series of activities. This workshop encourages teamwork and creative thinking in order to coordinate efforts to assure that we have clean water. Students work as water resource engineers where they explore the nature of solutes and particle size, as well as the pore size of the sieves, strainers, and fabrics as they focus on scientific processes and recording skills.

Roller Coaster – Forces for Fun
Playground Architecture

Students become playground architects as they design and construct a safe and fun roller coaster. Students create pathways and change elevations to test the distance their "vehicle" travels upon exiting the roller coaster and strategize to regulate the distance so that the "ride" ends well!

Launch It
Field Biology Meets Engineering

As ecologists, students explore the value of native plants in the landscape. They determine which native plant seeds need to be distributed and which places are most appropriate for the seeds they have selected. Then, as engineers, students design and build a catapult that will safely launch their seeds into the landscape.

Hop to It
Engineering Meets Field Biology

Students use the engineering design process to design a humane trap to catch an invasive "toad" before it causes environmental harm. We'll be exploring mechanical engineering, physical principles, measurements, and prototype testing to build the perfect toad trap! As field biologists they will need to find ways to trigger the trap from afar and to ensure that the "toad" is unharmed.

Ship Shape
Logistics Management

Working as logistics managers, students explore shapes and how they tessellate in order to find the best way to load cargo on a transport ship. Students investigate important geometry principles while linking their thinking to artwork by the famous M.C. Escher. This workshop sets the stage for studying tessellations in a variety of fields including architecture, manufacturing, and landscaping.

Workshop Offerings

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Do You Dig It?
Archaeology

Students will utilize the mathematical idea of a "quadrat," a standard method of measurement in archeology and ecology, to quantify findings on any field or area with such questions as "How many seedlings are on a farm?" to "How many fossils are on a slope?"As archaeologists, students explore a unique "dig site" to unearth evidence and construct a story about who might have been at the site. The lesson requires students to investigate statistics, engage in systems thinking, find patterns, and analyze stability and change over time.

Run the Colors
Forensic Investigation

Students conduct experiments using chromatography methods in order to figure out who ate the cookies! Both pattern recognition and logical deduction are key to figuring out the guilty party!

Wiggly Worms
Animal Behaviourism

Students become animal behaviorists as they design respectful, animal-friendly experiments to investigate the senses and reactions ofearthworms. Students will use this information to explore what components of the habitat will make them most comfortable.

Car Design
Green Engineering

Using recycled materials, students explore physics and math by testing ramps, pathways, and the objects that roll on them. Students will find ways to make objects move just the right amount up or down a ramp while also developing a familiarity with angles, friction, and gravity and how they impact momentum.

Penny Shine
Chemistry

Students explore the chemistry of substances while creating a unique and safe cleansing product to make tarnished pennies sparkle. Students experiment with cleaning methods that cause mechanical and chemical reactions. Students document their work as chemists in various formats so they can recreate their cleaners and design a marketing strategy with a packaging system.

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Workshop Offerings

To the Rescue
Package Engineering

Students are introduced to the engineering design process and learn how it might be applied to help solve real issues of civic and social concern. Students get hands-on as they design, construct, and test aid packages and delivery systems that will get supplies safely to those in need in a flood zone. The students explore the properties of materials, aeronautical engineering, package design, weight, and measurement as they solve multiple challenges encompassed in this workshop.

Oceans of Motion
Oceanography

Students measure the volumes and mass of various liquids and solids and explore density, floating, and sinking. As oceanographers, they have the quest of determining the best combination of materials to design their own Ocean In Motion; a model sea of colorful solids and liquids.

Water wheels at Work
Civil Engineering

Students become civil engineers by designing and building an elevator system to lift cargo. Powered by water, the system needs to include a wheel, a shaft, water catchment device, and a lift basket. Once they are satisfied with their construction, they make a blueprint of their design to replicate it at home.

Design a Boat
Naval Architecture

Students become naval architects and are challenged to design and construct boats needed to deliver food and building materials to countries in need. Through testing, they come to understand the relationship between boat shape, the upward force of water, and buoyancy. Grade-appropriate mathematical concepts and skills are used for the design process.

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WE DEVELOP

the next generation of Inventors, Scientists, Engineers, Artists, Designers, Tinkerers and Dreamers.

WE SPARK INVENTIVE SOLUTIONS

through our curriculum exhibition and educational approach

WE BUILD CONFIDENCE

by embracing the "fail forward" concept

WE FOSTER TEAMWORK

through minds-on workshops and activities that pose challenges with multiple outcomes or solutions.

Our mission is to provide cutting edge, inquiry based learning experiences for P-12 students, state-of-the-art professional development for P-12 teachers, and inventive STEAM challenges for family groups – all aimed at advancing the learning of STEAM concepts that translate into skills that address social, economic and environmental issues.

For additional information or to schedule a program,

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