A message from Anna Sterner, Director of Learning Programs

Dear Educators,

Welcome to the 2023-2024 school year! We are thrilled to have you embark on another exciting year of exploration and learning with us. Each one of us at the Michigan Science Center is committed to providing you and your students with a wide array of engaging programs designed to inspire curiosity, foster scientific inquiry, and ignite the imaginations of your students.

We understand the importance of flexibility, especially in the current educational landscape. That’s why we offer both in-person and virtual options, ensuring that you can access our programs in a way that suits your unique circumstances. Whether you’re planning an unforgettable field trip to our Detroit facility, seeking the convenience of our Traveling Science program, or looking to connect with us through our ECHO Distance Learning programs, we have something for every classroom.

Our team of dedicated educators and scientists has worked tirelessly to create new experiences that align with your curriculum and enhance your students’ understanding of STEM concepts. Whether you want to explore the wonders of our universe in the Planetarium, delve into the invention process in our Smithsonian Spark!Lab, or immerse your students in one of our traveling exhibitions, the Michigan Science Center is here to make your educational goals a reality.

Thank you for choosing the Michigan Science Center as your partner in inspiring the next generation of scientists, engineers, and leaders. We look forward to another year of sparking curiosity, promoting innovation, and making science come alive for your students.

Please don’t hesitate to reach out to our dedicated Education team with any questions or to discuss customized programs tailored to your specific needs. Together, we will continue to make STEM education accessible, engaging, and unforgettable.

Here’s to a year filled with discovery, wonder, and limitless possibilities!

“Science-cerely,”

Anna Sterner
Director of Learning Programs

p.s. Don’t forget! Thanks to Aramco Americas, teachers receive $10 admission to the Michigan Science Center through December 31, 2023. Teachers also receive discounted individual memberships when purchased in person at the Box Office.
We put YOU at the center of science

The Michigan Science Center is proud to offer a wide variety of experiences designed for onsite, offsite, and online audiences. Take a look through our catalog of program offerings, including field trips, theater programs, Traveling Science workshops, and much more!

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Onsite

Galleries and Demo Spaces

The Michigan Science Center is home to over 220 hands-on exhibits related to science, technology, engineering, and math (STEM). Stop by any of our exhibit galleries or join our museum staff at one of our open demonstration spaces to bring your classroom learning to life!

Science Stage

Join our educators for giant-scale science demonstrations and experiments exploring a variety of STEM topics including chemistry, physics, engineering, life sciences, and technology. Science Stage shows are included with general admission.

Smithsonian Spark!Lab

Engage in the process of invention, practice creative and collaborative thinking, and get hands-on with some wacky materials. Spark!Lab is where students are challenged to become inventors and innovators.

Early Learning Space

Filled with a delightful array of science toys and activities, this space fosters social, emotional, and skill development in young minds while sparking curiosity and wonder about the world around them. This temporary interactive gallery is designed for children aged 0-5.
Earth. Wind. Weather.
Earth. Wind. Weather. sponsored by General Motors, features 10 interactive exhibits that put guests in control of some of nature’s most powerful and impressive forces. Observe avalanches and geysers, explore Jupiter’s otherworldly atmosphere, command ocean waves, witness a powerful tornado, and learn about weather and climate.

STEM Playground
Explore engineering concepts as you construct paper airplanes, make sailboats travel into the wind and design a marble track maze. See how engineers design everything around us and the importance of planning and testing when building.

Space Gallery
Marvel at the wonders of the universe as you explore the history of human space travel, learn about rocket technology, tour the galaxy, travel to the sun and more. This gallery features our largescale model rockets and Apollo training capsule, on loan from the Smithsonian Institution.

Motion Gallery
Tinker with the fundamental properties of matter and energy using circuits, electrical loads, magnetic fields, simple machines, light, and more.

Health and Wellness
Discover the importance of good nutrition and fitness, uncover the hidden factors that affect your health both now and in the future, and learn how to make smart choices to improve your health.

Math Mountain
Test your addition, subtraction, multiplication and division skills in a mathematical hopscotch game and discover how many zeros are in a googol.

Roads, Bridges, Tunnels
Become an engineer as you walk our 80-foot long “Mini Mac” Bridge, travel a roundabout, and more.

Waves and Vibrations
This is the gallery to experiment with sounds, colors, reflection, waves, and more.

Nano Gallery
This interactive exhibition developed by the NISE Network engages family audiences in nanoscale science, engineering, and technology. Hands-on exhibits present the basics of nano science and engineering, introduce some real-world applications, and explore the societal and ethical implications of this new technology.

Sponsors of Science
Michigan Science Center’s Sponsors of Science Program supports students for fully sponsored field trips each year. Groups of 20 or more that meet our eligibility requirements may apply to receive sponsored admission and transportation for your entire group. Applications are accepted on a rolling basis.

THANK YOU TO THIS YEAR’S SPONSORS OF SCIENCE

To learn more and apply:
Towers of Tomorrow

On exhibit through January 12, 2024!
Now open at the Michigan Science Center – Towers of Tomorrow, where the world’s most iconic structures, built exclusively with over 500 thousand LEGO bricks, come to life. Be inspired to build your own our very own unique construct, but also your own Tower of Tomorrow and don’t miss this incredible traveling exhibition presented by Ford Motor Company Fund, now at the Michigan Science Center.

The exhibition features 20 astonishing skyscrapers from North America, Asia, and Australia constructed in breathtaking architectural detail by Ryan McNaught, one of only twelve LEGO® certified professionals worldwide.

McNaught and his award-winning team of builders have used over half a million LEGO® bricks and devoted over 2000 hours to building the structures featured in the exhibition.

Towers of Tomorrow with LEGO® Bricks is a travelling exhibition produced by Sydney Living Museums and toured internationally by Flying Fish.

Guest can create their own ‘towers of tomorrow’ with over 200,000 loose LEGO® bricks available in hands-on construction areas. Young and old will be limited only by their imaginations as they add their creations to a steadily rising futuristic LEGO® metropolis inside the exhibition.

Design for Disaster

Grades 3-8; 45-minute classroom workshop now available for field trip groups; $5 per student!
Towers of Tomorrow shows famous skyscrapers from around the world and gives you the chance to build your own. In this hands-on workshop, we will consider how weather factors into the design and construction of these famous structures. This workshop utilizes elements of the engineering design process to help participants develop solutions to the devastating effects of natural disasters on human-made structures.

This workshop also aligns with Next Generation Science Standards for grades 3 – 8.
Above & Beyond
On exhibit January 30 through September 8, 2024
Opening January 2024! Experience flight like never before. Race your friends at the speed of sound. Soar to orbit for a spectacular 360-degree view of Earth. Climb aboard a fascinating journey to Mars. From flying cars and supersonic planes to space elevators and mega-rockets, Above and Beyond takes you faster, farther and higher for a once-in-a-lifetime experience. Produced by Evergreen Exhibitions in association with Boeing, in collaboration with NASA and the Smithsonian’s National Air and Space Museum.

New permanent exhibits coming soon...

Level Up
Our most popular temporary exhibit, all about the science of games and gaming, is making its way to the lower levels of Mi-Sci. Interactive experiences include virtual reality, projection mapped games, giant board games, and much more will reappear soon in a new Gamer’s Village!

Play Lab
Coming soon! This new, permanent exhibit gallery centers around playful learning and will inspire students to build, tinker, and create while coming up with solutions to global challenges. The Play Lab is generously supported by the Community Foundation of Southeastern Michigan.
IMAX® Dome Theatre

**National Parks Adventure**
3rd Grade - Adult • Fall 2023 - Winter 2024
Narrated by Academy Award® winner Robert Redford, National Parks Adventure takes audiences on the ultimate off-trail adventure into the nation’s awe-inspiring great outdoors and untamed wilderness. Immersive IMAX® 3D cinematography takes viewers soaring over red rock canyons, hurtling up craggy mountain peaks and into other-worldly realms found within America’s most legendary outdoor playgrounds, including Yellowstone, Glacier National Park, Yosemite, and Arches.

**Pandas: The Journey Home**
All Ages • Fall 2023 - Summer 2024
Pandas are a lovable, iconic, and — unfortunately — highly endangered species. In Pandas: The Journey Home, meet the dedicated team working tirelessly to save these captivating creatures from extinction. Filmmakers were granted unprecedented access to the China Conservation and Research Center for the Giant Panda to tell the story of our furry friends. The pandas’ fascinating habits and unique personalities will leave you with a huge appreciation for the animals and the individuals working to protect them.

**Flight of the Butterflies**
3rd Grade - Adult • Winter 2024 - Fall 2024
The monarch butterfly is a true marvel of nature. Weighing less than a penny, it makes one of the longest migrations on Earth across a continent to a place it has never known. Follow the monarchs’ perilous journey and join hundreds of millions of real butterflies in the remote mountain peaks of Mexico, with breathtaking cinematography from an award-winning team including Oscar® winner Peter Parks. Be captivated by the true and compelling story of an intrepid scientist’s 40-year search to find the monarchs’ secret hideaway.
**Toyota Engineering Theater**

**Turtle Odyssey**
1st Grade - Adult • Fall 2023 - Winter 2024
Explore the unique lifecycle of an Australian green sea turtle named Bunji and her incredible journey across the open ocean. Narrated by Russell Crowe.

**Extreme Weather**
3rd Grade - Adult • Fall 2023 - Summer 2024
Get closer than you’ve ever been to collapsing glaciers, out-of-control wildfires, and tornado-whipped debris while discovering the surprising connections among these powerful forces.

**Space Junk**
3rd Grade - Adult • Winter 2024 - Summer 2024
After 50 years of launching our dreams into space, we’re left with a troubling legacy: a growing ring of orbiting debris that casts a shadow over the future of space exploration. Space Junk 3D is a visually explosive, sensory expanding voyage into our now-threatened Final Frontier. Experience mind-boggling collisions, both natural and manmade. Join us as the foremost expert, also known as the “Father of Space Junk,” guides us through the challenges we face in protecting them, forging a new age of space discovery.

**Planetarium**

**One World, One Sky: Big Bird’s Adventure**
PreK-1st Grade
Join Big Bird, Elmo and their new friend Hu Hu Zhu as they explore the night sky and journey to the Moon and back!

**A Lunar Journey**
1st Grade - Adult
Join us as we learn a little more about our nearest celestial neighbor, the moon. Together, we’ll check out the many shapes it makes, learn more about eclipses, and find out more about other moons in our solar system.

**Big Astronomy: People, Places, Discoveries**
5th Grade - Adult
Journey to three world-class observatories in Chile’s rugged Andes Mountains and arid Atacama Desert—remote, extreme regions that happen to have the perfect conditions for astronomical research.
Traveling Science

Our Aramco Traveling Science Program will Put YOU at the Center of Science through engaging science workshops, group presentations, and interactive experiences that inspire learners of all ages. Since opening in 2012, we have served more than 500,000 people in 61 counties throughout Michigan.

The Aramco Traveling Science Program serves schools, libraries, summer child care groups, after-school programs, and other community groups and events. We offer a variety of experiences that can be tailored to different age groups and themes. Science Festivals and Family Science Nights, group presentations (assemblies), and interactive classroom workshops, are just a few ways our team can bring the wonder of Mi-Sci to you!

Traveling Science is brought to you by
Science Festivals
Include 10 hands-on activity stations. The school must provide 10-12 volunteers, a large space for the festival to take place, access to electrical outlets, and 11 tables and chairs.

SCIENCEPALOOZA
SCIENCEPALOOZA inspires children and adults to "See Yourself in STEM". This kit of 10 hands-on stations will introduce students to cutting edge science concepts and technology being used in conservation efforts around the planet to preserve a brighter future for all humankind. Each activity station relates to real-world STEM professionals from diverse backgrounds!

APOLLO ADVENTURE
Discover the cosmos through 10 hands-on interactive stations. Participants will use a variety of science and engineering practices to develop a deeper understanding and appreciation for space and space exploration.

Discovery Dome Portable Planetarium
The Discovery Dome is a portable, inflatable dome screen that allows us to present a variety of earth and space science content. This program requires: a quiet indoor space with clean floors, minimum floor space of 25’x25’, minimum ceiling height of 12’, access to two 120-v outlets, and an accessible entrance or ramp into the space.

NEW! Light & Shadow Observatory: Eclipse Science
Grades 3 & Up
Embark on a virtual journey through the path of totality, exploring the phenomena of solar and lunar eclipses. Understand how light and shadow play a crucial role in creating these breathtaking events and get a sneak peak of the 2024 North American solar eclipse.

Worlds of Water
Grades 3 & Up
Are we alone in the universe? To answer that question, we explore the thing responsible for life: water! Start this intergalactic journey at Earth’s oceans before traversing the solar cosmos in search of water. We’ll even travel to exoplanets and discuss their potential to support life.

Expedition Solar System
Grades 6-8
All aboard for a high-speed race to the edges of our Solar System! Travel from the International Space Station to the mountains of Mars, the rings of Saturn, and the heart of Pluto. Meet the fleet of NASA robots able to travel these vast distances.

What’s Up? Your Guide to the Night Sky
All Ages
Learn about the motion of the Sun, Moon, and stars as we investigate the dark sky objects we can see from our very own backyard. Each show includes a tour of stars, constellations, and planets for the evening of your program.
Group Presentations

**KABOOMISTRY!**
For groups up to 250
Our most popular program! Why do things explode? Learn about the relationships between pressure, temperature, and fuel to explain why things go KA-BOOM! We’ll mix physics and chemistry to get some loud, flashy effects!

**FROSTOLOGY**
For groups up to 250
Investigate how temperature relates to the movement of atoms and molecules in this exciting presentation. Utilizing liquid nitrogen (LN2) we’ll see some ‘cool’ effects on solids, liquids and gases!

**EUREKA!**
For groups up to 250
Imagine where we would be without inventions such as the light bulb, microwave oven, or even our favorite toys. Join us as we explore the unexpected and amazing tales of how these everyday modern marvels came to exist and celebrate the scientists and inventors who made them possible.
Hands-On Workshops

All hands-on workshops are 45-minutes in length unless otherwise noted and designed for up to 30 students per workshop. A minimum of 15 minutes between sessions is required to reset materials.

MAGNETS
Grades Pre-K – 2
Discover the force of magnetism as we push and pull using magnets of all shapes and sizes. Students will make objects defy gravity, see a magnet made by using electricity, and create their very own art project using magnets!

STATES OF MATTER
Grades K – 6
Learn how to define the states of matter and experience substances changing from one state to another. Some substances blur the line between liquid and solid. We’ll get our hands into some slimy stuff to decide which state it is.

OCEANS ALIVE
Grades 1-5
Dive headfirst into the watery depths as we explore the layers that make up our oceans! Students will discover the difference between ocean layers and what adaptations allow aquatic animals to call them home.

CURRENT EVENTS
Grades 2 – 8
What is electricity and how does it flow? Observe the power of electricity and learn about its simplest form. Students will then build simple circuits using household produce!

WIND TURBINES
Grades 3 – 8
Participants will be challenged to maximize the amount of electricity generated by a wind turbine of their own creation by changing the shape of its blades. Work as a team and use problem solving skills to help increase the turbine’s performance.

NEW! WEATHER WATCH
Grades 2 – 8
Participants will put their building skills and problem solving to the test as they work together to come up with a structure to withstand different weather events. We’ll take a dive into the weather and climate to see if your team has what it takes to beat the destructive forces of nature.

DIVING INTO DNA
Grades 6 – 8
Participants will be able to describe what DNA is, where it’s found and how it codes for traits. Everything living has DNA and students will be able to extract this genetic material from a variety of fruit.

EGG-POLLO 11
Grades 2 – 8
Put your engineering skills to the test as you design a carrier to safely land an egg on the moon! Learners will boldly go through the engineering design process to create a model simulation of the Apollo 11 moon landing.

OWL PELLET DISSECTION
Grades 1 - 3
Dissect owl pellets and reconstruct the skeletons of animals inside to discover what the owls have been eating and learn about food webs and ecosystems. (Dissection fee included in workshop price)

COW EYE DISSECTION
Grades 4 – 8
Students will work in groups to perform a cow eye dissection while under the direction of a trained Mi-Sci Educator. Compare the cow eye to human eyes as we take a close look at its features and functions. (Dissection fee included in workshop price)
ECHO DISTANCE LEARNING PROGRAMS

Virtual Visits

Virtual visits include a 45-minute interactive program taught via webcam and a complimentary tech-check prior to program. Select Virtual Visits include hands-on materials for 30 students shipped to your classroom (remote classes will be provided with a materials list to gather).

NEW! LIGHT & SHADOW OBSERVATORY: ECLIPSE SCIENCE

45 minute workshop • Grades 3 & Up

Embark on a virtual journey through the path of totality, exploring the phenomena of solar and lunar eclipses. Understand how light and shadow play a crucial role in creating these breathtaking events and get a sneak peak of the 2024 solar eclipse that will be visible from the United States.

FROSTOLOGY

45 minute workshop • K – 5th Grade

Jump knee-deep into our wintry virtual visit. Make fluffy snow and sparkling white slime! Learn the science behind all things frosty as we investigate the effects of temperature on atoms and molecules. This seasonal program runs for a limited time (November – March).
KNOW WHERE IT GROWS
45 minute workshop • 2nd – 4th Grade
Environmental conditions, such as weather, affect where and when plants grow. We’ll design solutions to reduce the impacts of weather-related hazards on plants in a community garden.

BURN BOSS TRAINING
45 minute workshop • 3rd – 5th Grade
Engineers use controlled fires to restore habitats for plants and animals. Work together to learn more about the habitats of endangered plants and animals in areas that need fires to thrive.

GLOBAL SOUNDSCAPES
45 minute workshop • 4th – 8th Grade
What do vibrations look like in super-slow motion? What do sounds tell us about the health of our planet? Join us on an ear-opening journey into the science of sound and the emerging field of soundscape ecology. Developed by the Purdue Center of Global Soundscapes.

RAD REACTIONS
45 minute workshop • 4th – 8th Grade
Explore the science of chemical and physical reactions using simple materials you can find at home or the grocery store. We’ll make lava lamps, colorful explosions, and discuss what happens when water and oil are forced to mix together.

VISIBLE LIGHT
45 minute workshop • 4th – 8th Grade
Identify frequencies of light both inside and outside the range of human vision. Explore how different animals perceive color, then learn the story behind one of the world’s most famous inventions— the lightbulb!

KABOOMISTRY!
45 minute workshop • 3rd Grade & Up
Our most popular program! Why do things explode? Learn about the relationships between pressure, temperature, and fuel to explain why things go KA-BOOM! We’ll mix physics and chemistry to get some loud, flashy effects!

Keep the Learning Going!
Check out our growing catalog of “At-Home Science” activities which include step-by-step instruction guides for science experiments you can try in your classroom or outdoors using simple materials! Make sure to follow us on YouTube @Mi_Sci to watch videos of these experiments and much more.
Children learn best through play. It’s an essential part of child development. But not every child gets the time and chance to play that they deserve. Watch children play and you’ll see them experiment, imagine, work together, and overcome emotional ups and downs. They’re stretching their minds as well as their muscles. They’re learning. And they’re picking up the skills to thrive today and flourish tomorrow – whatever tomorrow looks like.

That’s where we come in. With support from The LEGO Group, The Michigan Science Center is excited to be joining a network of organizations, professionals, and caregivers that are making learning through play a priority for every child around the world.

Learn more about Learning Through Play at: https://learningthroughplay.com/
The STEMinista Project

The STEMinista Project is an initiative started by the Michigan Science Center to connect girls to role models who help them see themselves in STEM. By creating opportunities to practice basic inquiry, analysis, and problem-solving through fun and interactive learning activities along with mentorship, Mi-Sci’s STEMinista Project seeks to place HER at the center of science by empowering girls to lead the next generation of STEM innovators.

Girls in 4th-8th grade are encouraged to join the STEMinista Project by following the project on social media or visiting our website where you can browse our database of STEMinista Role Models (women in STEM careers from around the world). Are you a STEMinista Role Model and willing to share your story with girls? Consider completing an application to be featured in our database.

Learn more about The STEMinista Project at: https://mi-sci.org/steminista-project/

Educator Newsletter

Interested in keeping up with everything at the Michigan Science Center?

Sign up for our Educator Newsletter at:
Field Trips

Everyone remembers their first visit to the Michigan Science Center, and we are here to help your students build core memories that will stay with them into their futures. To schedule your visit:

- 313-577-8400 ext. 420
- reservations@mi-sci.org

Field trips are priced at a per-person rate with a minimum* of 20 people in the reservation. We require that for every 10 students, there is one adult chaperone. That chaperone is given complimentary General Admission. If the reservation equals 20 with chaperones, all will be charged the $11 per-person rate.

**Bring Mi-Sci to You with Traveling Science**
To book a Traveling Science program, visit www.mi-sci.org/traveling-science and submit an inquiry form or send an email to outreach@mi-sci.org. Learn more about Traveling Science on page 10-13.

**Connect with Us Online with ECHO Distance Learning**
To book a Virtual Visit for your group, visit www.mi-sci.org/echo and submit an inquiry form or send an email to echo@mi-sci.org. Learn more about ECHO on pages 14-15.

*Some exceptions may apply.
Deposit

- Deposits are required to secure your booking. When booking more than three weeks in advance, the deposit is $50 for field trips and 50% for outreach programs. When booking within three weeks of the visit or program, the full balance is required.
- When making an inquiry, you are not considered booked until the deposit has been received.
- Currently, we accept deposits as credit card payments or by check. If sending a check in the mail, a scanned copy is requested by email. All payments should include a copy of the invoice.

Headcount & Final Payment

- Headcount and payment of the reservation balance are required three weeks prior to your visit.
- Final balance may be paid by credit card or by check. If paying with a check by mail, a scanned copy of the check must be submitted by the three-week deadline to reservations@mi-sci.org. Please do not send checks with the chaperones or teacher on the day of your visit or give checks to Mi-Sci educators at your school.
- If the balance is not settled within one week prior to your visit, your reservation will be canceled and all deposits will be forfeited.

Additional Guests

- Additional Guests paying with the group are eligible for the group rate.
- Guests entering independently of the group are not eligible for the group rate.

Refund & Cancellation Policy

- Any cancellations will result in a forfeiture of the deposit.
- Visits may be rescheduled prior to the originally scheduled date with a $25 rebooking fee. No additional deposit is required.
- No-shows will result in a forfeiture of all deposits and payments.
- We are unable to issue refunds when headcounts are less than the reservation indicates.

Other Field Trip Logistical Information

- **Arrival:** When your group arrives at the Michigan Science Center, a representative from our Guest Relations team will welcome your students and review our guidelines for a safe and fun visit.
- **Lunch:** You are welcome to enjoy lunch on-site during your visit. We do not have a cafeteria. We do have a Farmer’s Fridge vending machine with refrigerated salads, sandwiches, and snacks on a limited basis. Lunch seating is assigned. Please be mindful of your scheduled time and assigned lunch area.
- **Buses and Parking:** Mi-Sci does not guarantee on-site parking. There is bus loading and unloading in the circle drive located directly in front of the museum entrance on John R St. Please drop off and pick up students at this entrance. Parking may be available in metered spots around Mi-Sci. Please abide by all parking signage. Bus drivers staying with the group are admitted for free.
- **Programming:** Mi-Sci is a self-guided experience. Students are required to remain with chaperones at all times. Science Stage shows take place multiple times a day and are included in the admission fee. Theater shows are available at the group rate of $3 per person. Private showings of specific films can be arranged prior to your visit when groups are larger than 100 persons.
WE PUT YOU AT THE CENTER OF SCIENCE!