

2023-2024 GREAT LAKES SCIENCE CENTER

# Educator Guide



In-Person Field Trips,  
Outreach to Your School,  
and Virtual Experiences  
are Available!



GREAT LAKES  
Science Center

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Great Lakes Science Center thanks its supporters from fiscal year 2022

# WELCOME BACK, EDUCATORS!

## We Make STEM Come Alive!

We are proud to offer quality STEM programming to meet your educational needs at both Great Lakes Science Center, and your school. We offer a diverse selection of in-person, virtual and outreach STEM programs. Thank you for choosing Great Lakes Science Center.

### Pricing and Reservations

#### 1 Field Trip Pricing

We offer multiple field trip options for groups of 10 or more people. Rates apply to school (public, private, charter or home school) visits weekdays during the school year. Advance reservations are required and payment is due two weeks before your visit.

General admission - \$8 per student

Admission & DOME Theater - \$11 per student

DOME Theater only - \$8 per student

*\*A 6 percent City of Cleveland admissions fee will be added to your visit.*

#### 2 Add on a hands-on workshop

Enhance your field trip or outreach experience with a hands-on workshop starting at just \$5 per student. All workshops are specifically designed to support Ohio's Learning Standards in science, math, literacy and social studies. See page 3 for an overview of workshops and pages 4 – 6 for detailed information on each.

### Book your experience

Save time by registering online through our website! A reservationist will register your field trip and confirm the visit details with you directly.

Please include the following information with your reservation:

- Full contact information
- School name and grade level
- Preferred visit date
- Arrival and departure times
- Number of students and chaperones
- If you need time to eat lunch
- If you'd like to add a hands-on workshop

**Register online at [GreatScience.com](http://GreatScience.com) and click on Educators>Plan a Field Trip, or email us at [edhelp@glsc.org](mailto:edhelp@glsc.org).**

**Hint!** Book earlier in the year to avoid crowds and to ensure you are able to receive the programming you want.

# Hands-On Workshops

for Field Trips or Outreach

## Content Standards

| Program Type       | Grade Band        | Outreach Available?    | Program                                  | Inquiry      | Earth & Space Science | Physical Science | Life Science | Technology/Engineering Design Process | Math | English/Language Arts | Social Studies |  |
|--------------------|-------------------|------------------------|--|--------------|-----------------------|------------------|--------------|---------------------------------------|------|-----------------------|----------------|--|
| Hands-On Workshops | PreK-K            | Yes                    | Engineering Challenge: Three Little Pigs | X            |                       | X                |              | X                                     | X    | X                     | X              |  |
|                    | 1-2               | Yes                    | States of Matter: Ice Cream Science      | X            |                       | X                |              |                                       |      |                       |                |  |
|                    |                   | Yes                    | Dissection: Owl Pellet                   | X            |                       |                  | X            |                                       |      |                       |                |  |
|                    |                   | Yes                    | Engineering Challenge: Skyscrapers       | X            |                       | X                |              | X                                     | X    |                       | X              |  |
|                    | 3-5               | Yes                    | Engineering Challenge: Rescue Mission    | X            |                       | X                |              | X                                     | X    | X                     | X              |  |
|                    |                   | Yes                    | DNA Investigation Lab                    | X            |                       |                  | X            |                                       |      |                       |                |  |
|                    |                   | Yes                    | Jumping Jitterbugs                       | X            |                       | X                |              | X                                     |      |                       |                |  |
|                    |                   | Yes                    | Dissection: Cow Eye                      | X            |                       |                  | X            |                                       |      |                       |                |  |
|                    | 6-12              | Yes                    | Electricity Investigators                | X            |                       | X                |              | X                                     |      |                       |                |  |
|                    |                   | In-house only          | Coding & Robotics                        | X            |                       | X                |              | X                                     | X    |                       |                |  |
|                    |                   | Yes                    | Heart Dissection                         | X            |                       |                  | X            |                                       |      |                       |                |  |
|                    | Big Science Shows | All-Recommended PreK-2 | Only Outreach                            | Bubblemania  | X                     |                  | X            |                                       |      | X                     |                |  |
|                    |                   | PreK-12                |  | Fire and Ice | X                     |                  | X            |                                       |      |                       |                |  |
| Magic of Matter    |                   |                        |  | X            |                       | X                |              |                                       |      |                       |                |  |
| Math in Space      |                   |                        |  | X            | X                     | X                |              |                                       | X    |                       |                |  |



All of the following workshops are available to be booked as a field trip or outreach to your school (unless otherwise noted).

## Pre-K/Kindergarten

*20 minimum/30 maximum. Additional sessions will be scheduled for groups larger than 30. Duration: approximately 30 minutes.*

### **Engineering Challenge: The Three Little Pigs**

*Field trip - \$5 per student*

*Outreach - \$7 per student*

Students will listen to this classic story and become engineers as they perform hands-on experiments exploring which materials can withstand the big, bad wolf.

## Grades 1-2

*20 minimum/30 maximum. Additional sessions will be scheduled for groups larger than 30. Duration: approximately 45 minutes to 1 hour.*

### **States of Matter: Ice Cream Science**

*Field trip - \$8 per student*

*Outreach - \$10 per student*

Can we turn hot chocolate into ice cream? Explore the properties of solids, liquids and gases in this tasty experience. (Students with dairy/chocolate allergies will be offered an alternative treat.)

### **Dissection: Owl Pellets**

*Field trip - \$8 per student*

*Outreach - \$10 per student*

Students will dissect an owl pellet with plastic tweezers. They will compare their findings with an identification chart to explore that creature's habitat and discover what was in their diet!

### **Engineering Challenge: Skyscrapers**

*Field trip - \$6 per student*

*Outreach - \$8 per student*

Students will transform into engineers when they are challenged to build a tower out of simple paper that can hold weight.

## Grades 3-5

*20 minimum/30 maximum. Additional sessions will be scheduled for groups larger than 30. Duration: approximately 45 minutes to 1 hour.*

### **Engineering Challenge: Rescue Mission**

*Field trip - \$6 per student*

*Outreach - \$8 per student*

Students use the engineering and design process to construct a solution in small groups to complete their mission.

### **DNA Investigations Lab**

*Field trip - \$8 per student*

*Outreach - \$10 per student*

Students explore how traits express themselves and extract their own DNA.

### **Jumping Jitterbugs**

*Field trip - \$9 per student*

*Outreach - \$11 per student*

Students explore how circuits and electricity work together while designing and creating their own Jumping Jitterbug "bot" to take home.

### **Dissection: Cow Eye**

*Field trip - \$9 per student*

*Outreach - \$11 per student*

Students will examine the complex structure of an eye and how it functions by cutting into and dissecting a cow eye. (Must be reserved at least four weeks in advance).



## Grades 6-12

*20 minimum/30 maximum. Additional sessions will be scheduled for groups larger than 30. Duration: approximately 1 hour.*

### **Electricity Investigators**

*Field trip - \$8 per student*

*Outreach - \$10 per student*

Students investigate circuits and electricity as they use the engineering design process to design and create their own working flashlights from common items.

### **Coding & Robotics**

*Field trip - \$8 per student*

*Not available as outreach*

Students will learn how to code and debug their bots as they learn how to navigate them through a series of challenges.

### **Dissection: Pig Heart**

*Field trip - \$10 per student*

*Outreach - \$12 per student*

Students will get a tour of the body's pump with this dissection of a pig heart. They will cut into the heart to reveal the four chambers, peer into the aorta, and inspect blood vessels up close. (Must be reserved at least four weeks in advance.)



# Outreach to Your School!

In addition to the hands-on outreach workshops that we can bring to your school, we are excited to continue offering our Big Science Shows!

## Outreach Big Science Shows

We bring these larger than life science experiments to your school! Choose from the following themes. Each show ends with time for questions and answers.

Please note that a space of at least 20 x 20 feet is required along with a high ceiling. Auditoriums, cafeterias and gymnasiums are usually great spaces.

*\$400 per show. Duration: approximately 30-45 minutes.*

- **Bubblemania** - Step into the world of Bubblemania and learn everything there is to know about these soapy spheres! Why are they shaped the way they are, and why do they look the way they do? Bubbles come alive while we become "Bubbleologists" and investigate molecules, shapes, and colors.
- **Fire & Ice** - Experimentation with temperature is taken to the extreme when we battle fire and liquid nitrogen in an explosive demonstration of physics and chemistry.
- **Magic of Matter** - How can matter change from one state into the other? We experiment with chemistry and liquid nitrogen to uncover the "magic" behind why some materials behave in unexpected ways!
- **Math in Space** - 3-2-1 blast off! Explore the stages of human flight outside Earth's orbit and the mathematics that make it possible.

## Outreach Extended Mileage Fee

Up to 40 miles from the Science Center is included in the program fee. A mileage fee of \$2 per mile will be charged for any additional mileage beyond the initial 40 miles. Max distance we can serve is 120 miles from the Science Center.



## Virtual Exhibit Experience – Life in Space

*\$150 per experience. Duration: approximately 45 minutes.*

How is life in space similar to life on a submarine? Explore exhibits from the NASA Glenn Visitor Center at Great Lakes Science Center and the USS Requin's (SS 481) submarine from the Carnegie Science Center that demonstrate the challenges and solutions of living below or far above the earth's surface.

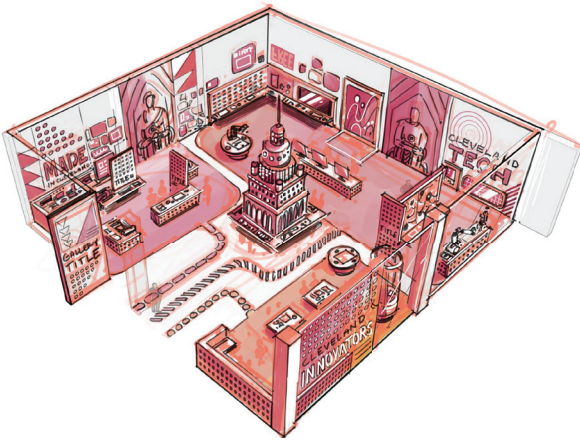
We use Zoom for all virtual interactions and will email a link to the contact on the registration by the end of the business day before the program. This can be emailed out to your families with students at home. The recommended class size for all virtual programs is 30 students or fewer. The Zoom call will start at the registered start time of the program.

Developed in partnership with the Carnegie Science Center.





# Coming Soon



Guests can experience the all-new Cleveland Creates Gallery when it opens in February 2024. This awe-inspiring exhibition gallery is a testament to the remarkable city of Cleveland and the extraordinary breakthroughs driving its diverse industries. Step into a world of boundless excitement as you engage with interactive displays that delve into the realms of technology, coding, robotics and beyond, leaving you captivated by the endless possibilities of what Cleveland can do.

Presented by  **SHERWIN-WILLIAMS.**



**Don't miss Build It! opening November 3, 2023!**

Dive into a colorful sea of bricks and let your imagination run wild! Whether you're a seasoned builder or a first-time explorer, this extraordinary wonderland of bricks is the perfect playground to construct your wildest ideas!

Follow us on social media  
for the latest updates.

   #StayCuriousCLE

# Educator Resources

## FREE Admission Every Day for Teachers

Who says kids should have all the fun? The Science Center offers free general admission to Ohio teachers every day. Just bring a copy of your teaching certificate, OEA card, union card, or school ID listing teacher/educator and preview the exhibits before your next field trip.

## Discounted Family Memberships for Teachers

Discounted memberships are available for teachers. You and your family can enjoy free general admission to the Science Center, NASA Glenn Visitor Center, Steamship *William G. Mather* and most traveling exhibitions all year long. Get discounts on our camp programs and free general admission to 360+ reciprocal science centers and museums around the country. Call 216-696-4576 for details.

## Educator Resource Fair

The Science Center is planning an on-site Educators Resource Fair from 4-7 p.m. on October 4, 2023! Please check our website for up to date information on upcoming events like this one.



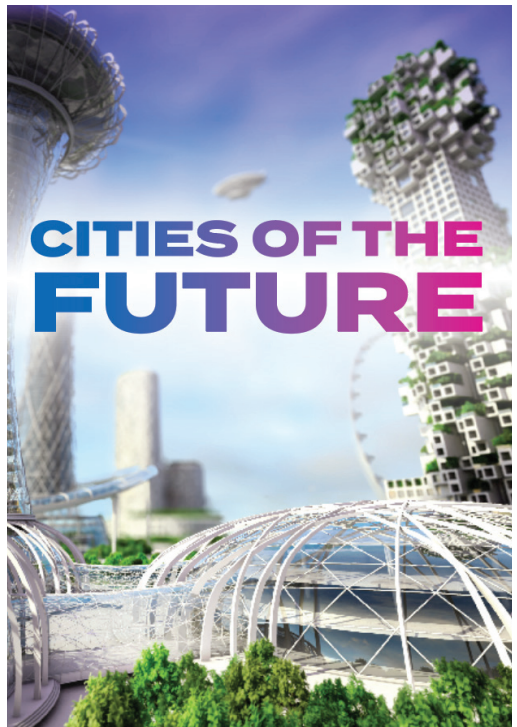
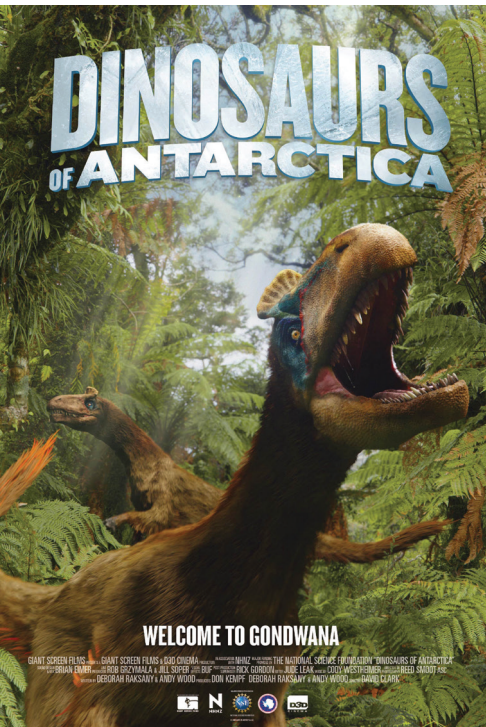
# Cleveland Clinic DOME Theater

## Add a movie to your field trip!

Giant-screen films can inspire STEM careers by bridging the gap between entertainment and science learning.

Enhance your students' educational experience by adding a film shown in our six-story high domed theater to your visit! Educator guides that include information on national content standards as well as pre- and post-visit activities are available for our films. Please visit [GreatScience.com](http://GreatScience.com) and click on "Educators" for more details. Pricing is also available for movie-only field trip experiences. Please see page 2 for details.

## NOW SHOWING



## Or choose from one of these recent favorites!

Journey to Space, Tornado Alley, Titans of the Ice Age, National Parks Adventure, Dream Big, Amazon Adventure, Superpower Dogs, Incredible Predators or Great Barrier Reef



# What to See and Do

## NASA Glenn Visitor Center

Great Lakes Science Center is home to one of only 11 NASA Visitor Centers in the nation. Reinforce your curriculum as students take a look at the past, present and future of space travel, see a real space command module, learn how astronauts live and work on the International Space Station, and explore propulsion, power, materials science and much more!

## Mission to STEM

Field trips are moving into the realm of augmented reality at the Science Center! The state-of-the-art Mission to STEM app brings our NASA Glenn Visitor Center to life with virtual and augmented reality. In this interactive digital mission, students will virtually climb into the Apollo command module, fire up a rocket, conduct International Space Station experiments and more. Your class will be provided with iPad minis or download the app and bring your own set of devices.



# What to See and Do

## Science Phenomena

Get hands-on with science! Our Science Phenomena Gallery encourages students to observe, investigate, predict and test the principles behind light, sound, motion, weather, electricity and magnetism.

## BioMedTech: Engineering for Your Health

Enter the world of biomedical technology and engineering. Students explore interactive exhibits, videos and educational displays focusing on genomics, stem cells, prosthetics, functional electrical stimulation (FES) and medical imaging as they learn about the work being done by local researchers to develop innovative medical technologies. The BioMedTech's nano exhibit engages guests through a series of interactive experiences that make a world we cannot see come alive through real-life applications and small-scale, but powerful technologies.

## Daily Science Demonstrations

Science comes to life in our spectacular demonstrations. Daily science demonstrations are free with paid general admission. Seating may be limited as all demonstrations cannot be reserved and are open to the public. You will be notified of the current day's times and themes at check-in.





# Important Information

## Title I School Admission

Ohio schools who receive federal Title I services are entitled to **free general admission** to the Science Center as part of a field trip on any school day. DOME Theater films, workshops, virtual experiences, outreach and the Steamship *William G. Mather* are not included. Status is subject to confirmation.

## Payment and Confirmation

A confirmation packet will be emailed to you following the completion of your reservation. Please review the packet thoroughly to ensure you have everything you need. Payment for all field trips is due 14 days prior to your visit date. Acceptable forms of payment include credit card, check, and purchase orders.

## Admissions Fee

Please note that a 6 percent City of Cleveland admissions fee is applicable to all field trips and will be added to the cost of the visit.

## Cancellation Policy

Please let us know if you need to cancel. Payments are non-refundable and payments made toward a canceled visit will be held as a credit toward a future visit.

## Chaperones

Great Lakes Science Center requires one adult chaperone for every five students. Chaperones within the one-to-five ratio will receive free admission. Additional adults must pay the posted student rates.

## Educator Resources

We want to make it easy to prepare for your day at the Science Center. Visit [GreatScience.com](http://GreatScience.com) and click on Educators>Educator Resources>Online Resources where you'll find a wide range of materials to help prepare you and your classroom for your visit.

## Lunch Options

Please let us know at the time of reservation if you plan to eat lunch at the Science Center. A reserved lunch space is available with all field trip reservations on a first-come, first-served basis. Schools are welcome to bring brown-bag lunches to be enjoyed in our group lunch space or outdoors along the harbor (weather permitting). Pre-ordered boxed lunches are also available through the Science Center's Café. A menu and ordering information are included in your confirmation email. All pre-ordered lunches must be confirmed and paid for at least 72 hours before your visit.

## The Science Store

The Science Store carries a large selection of educational items that complement our exhibits and films. Advanced orders can be placed by calling the Science Store at 216-696-5575 for more details.

## Parking

Complimentary bus parking is available on a first-come, first-served basis. Buses will receive instructions on where and how to park upon arrival.



Great Lakes Museum of Science, Environment, and Technology  
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