

CONNECTICUT SCIENCE CENTER

Educator Guide

2016–2017



Leonardo da Vinci
**MACHINES
IN MOTION**

Fall 2016



**ENGINEERING
EARTH**

Spring 2017

Connecticut
Science Center



Fall 2016



Leonardo da Vinci MACHINES IN MOTION

We know Leonardo da Vinci as the painter of the Mona Lisa, but he was so much more. See and touch 40 of his ahead-of-their-time machine designs in person, including flying machines, an armored car, and even a robot! Supported by CBS, A Xerox Company.

Spring 2017



Summer 2017



We invite you to rediscover what lies beneath our feet - earth! Grasp the hows and whys of building with raw earth materials. Learn how we're changing the way we work with the most common materials on the planet. Supported by CBS, A Xerox Company.

Book Now



LIVE STAGE SHOWS

Join us for an interactive, live stage show. Meet LIVE animals while exploring different habitats, discover sounds around the world, or investigate the laws of physics with our STEM educators.

Included Daily



LIVE GALLERY SCIENCE

Join us daily for fun, interactive live science demonstrations. There are dozens of programs on a variety of fascinating science topics. Programs vary, change weekly, and are included with General Admission.

Field Trip Planning

The Connecticut Science Center is your very own larger-than-life learning lab. Customize a day of fun and learning that fits your curriculum, time, and budget.

STEP 1:

Complete a Reservation Request Form

CTScienceCenter.org/Booknow

STEP 2:

Receive Your Booking Notice

Once your reservation request has been processed (typically within 48 hours), you will receive a Booking Notice via email which will detail your itinerary and total cost.

STEP 3:

Pay for Your Field Trip

Full payment is required 30 days in advance of your visit.

Accepted forms of payment are: organizational check, cash, or credit card.

Please note: Purchase orders are not accepted.

Field Trip Hours and Information

Tuesday–Friday, 9AM–5PM

Open for field trips Monday–Friday starting in June 2017!

Reservation Center

Phone: (860) 520-2150

Email: reservations@ctsciencecenter.org

CTScienceCenter.org/FieldTrips

[General Information](#) | [Page 13](#)

Field Trip Pricing (per person)

General Admission (with one free chaperone per 24 students)	\$11
Add a 3D Movie	\$6
Add a Stage Show	\$6.50
Add a Classroom Program (45 minutes)	\$7.50
Add a Space Lab Program (60 minutes)	\$9.50
Add an Enrichment Program (90 minutes)	\$15
Add a Subway Boxed Lunch*	\$7.50

* Your group may order boxed lunches from our on-site SUBWAY® restaurant by submitting a boxed lunch order form. Boxed lunches include a 6" sub, potato chips, a chocolate chip cookie, and one beverage.

TEACHERS AND CHAPERONES

- 1 adult per 24 students is admitted at no charge. All other adults will pay the same rate as students and will be listed on your Booking Notice as chaperones.
- An 8:1 student to chaperone ratio is required for groups bringing grades K–7, and a 12:1 ratio is required for groups bringing grades 8–12.

[Outreach Programs](#) | [Page 9](#)

[Mandell Academy for Teachers](#) | [Page 11](#)



Sight and Sound Experience



River of Life

Exhibit Galleries

During a field trip to the Science Center, students can explore more than 165 fascinating exhibits that were designed to support the Connecticut Science Framework. They'll take part in immersive science activities that will inspire their curiosity about the world around them.



KidSpace | Pitney Bowes Foundation Gallery: LOBBY LEVEL

Available for Grade 2 and under, KidSpace invites children to use all their senses—practicing skills at the heart of lifelong science learning. Waterplay, the gallery's signature exhibit, invites experimentation with water and colored balls as they travel through vortices and fountains.



Forces in Motion | Eversource Gallery: LEVEL 4

Welcome to the world of extreme engineering, where you can test pilot helicopter designs, race against gravity, build a unique structure with Imagination Playground blocks, and explore the physics of motion through a variety of interactive activities that investigate motion-related phenomena.



Sight and Sound Experience | Chase Family Foundations Gallery: LEVEL 4

Discover the hands-on scientific fun behind music and art. In this laboratory of artistic expression, you will use your eyes, ears, emotions, and full body to hear, see and feel the energy forces behind all light and sound.



Invention Dimension | Travelers Gallery: LEVEL 5

Challenge yourself to create the next great invention. Think outside the box, like the scientists, engineers, and technicians behind Connecticut's rich history of ingenuity, invention, and innovation. For inspiration, check out the unique inventions created by Connecticut students participating in the Connecticut Invention Convention.



Exploring Space | United Technologies Corporation Gallery: LEVEL 5

Step beyond the light-lock entrance of this gallery and enter into a dark and dramatic abyss of the spectacular and the unknown. Here, Earth, the Moon, Mars, galaxies, solar systems, remote planets, and the rest of the universe await your exploration. Travel to a black hole, create a crater, pilot a lunar lander, and more.



MAKE CURRICULUM CONNECTIONS WITH 165 PERMANENT EXHIBITS IN TEN GALLERIES

Our exhibits and lab experiences tie directly to state science standards in subject areas like light, sound, the human body, weather, river ecology, motion, and much more.

► CTScienceCenter.org/CurriculumConnections



The Picture of Health | Aetna Foundation Gallery: LEVEL 5

Unravel the mysterious inner workings of the human body to discover how much of our health and well being is a matter of choice, and how much is a matter of chance. Examine the powerful (and often surprising) connections between your mind and body, strength and flexibility, and diet and exercise.

Health Lab programs sponsored by Hartford HealthCare



The Sports Lab | The Hartford Financial Services Group Gallery: LEVEL 5

Push, pull, pedal, touch, observe, examine, and analyze the connections between body and mind and how they each affect our performance in everyday activities and competitive athletics. In the process, you'll learn a little more about the inner athlete in each of us.



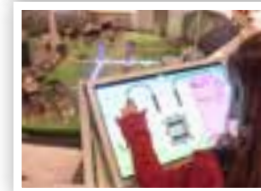
River of Life | LEVEL 6

Encounter the Connecticut River from unique and perhaps unfamiliar perspectives. Dive deep into the river's past, starting at its geological origins, and then journey through time into the modern era where you can assess how our everyday human activity has had an impact on the life of this river and all the ecosystems it sustains.



Planet Earth | FM Facilities Maintenance Gallery: LEVEL 6

Earth is a living planet with countless stories to tell about its rich history. Explore our home planet from its atmosphere down to its core as you become a geologist, meteorologist, environmentalist, and paleontologist.



Energy City | Energize Connecticut Gallery: LEVEL 6

Wind turbines. Solar panels. Hydropower. Fuel cells. These are just a few of the alternative energy technologies you will discover in this gallery. Find out how electricity travels from energy sources to your home. Tour this virtual city to measure the effect of your energy uses and how they affect the planet.



Mysteries of the Unseen World



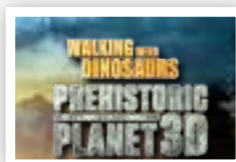
Live Stage Shows

Maximilian E. and Marion O. Hoffman Foundation Science Theater

Experience science in an engaging environment with a visit to our Hoffman Foundation Science Theater. Each show is carefully selected for science content and offers relevant connections to the Connecticut Science Framework.

3D Movies

3D Movies offer a unique three-dimensional experience enabling students to learn about the science that affects our lives.



ENDS JANUARY 1, 2017

Walking with Dinosaurs: Prehistoric Planet 3D

Recommended for Grades 3–8; 40 minutes



NOVEMBER 25, 2016–APRIL 9, 2017

Journey to Space 3D

Recommended for Grades 4–8; 40 minutes



ENDS APRIL 9, 2017

Last Reef 3D

Recommended for all grades; 40 minutes

Special Movies for School Groups Only

Available year-round.

Mysteries of the Unseen World

Recommended for Grades 3–8; 40 minutes

Hidden Universe 3D

Recommended for all grades; 45 minutes

3D Sun

Recommended for Grades 2 and up; 20 minutes

Wild Ocean 3D

Recommended for Grades 2 and up; 40 minutes

Tornado Alley 3D

Recommended for Grades 2 and up; 40 minutes

3D Movie and Stage Show Pricing (per person)

Add a 3D Movie	\$6
Add a Stage Show	\$6.50

Scheduling:

Complete and submit the Reservation Request Worksheet:

► CTScienceCenter.org/BookNow

Live Stage Shows

Join us for an interactive LIVE stage show hosted by our STEM Educators.

NEW! Global Soundscapes Coming October 2016

Recommended for Grades 4–8; 45 minutes

Embark on a mission to investigate the dramatic soundscapes of Costa Rica's rainforests, Hawaii's coral reefs, and Mongolia's vast grasslands. Learn how animals use sounds to survive and communicate in lush, but threatened environments. Funded by the National Science Foundation.

Creative Creatures

Recommended for Grades K–5; 40 minutes

Explore wild habitats to discover why and how different creatures must adapt to their surroundings. Once you're an adaptations pro, you'll create your very own clever, creative creature! After the show, all participants are invited to the River of Life Gallery to get up close and personal with some of our favorite critters and ask additional questions.

Forces and Motion

Recommended for Grades 4–8; 45 minutes

A unique program to engage your students in physics and introduce them to Newton's Laws. Combines live demonstrations with video and other imagery projected on the theater's 30 ft x 40 ft screen.



Educator guides and details are available on our website:

► CTScienceCenter.org/SchoolShows



Discovery Center Lab Programs
supported by



Discovery Center Lab Programs

During a hands-on lab program in the Science Center's Pfizer Discovery Center, students perform investigations and learn how science is part of their everyday experiences. Students themselves are active participants, performing experiments and making discoveries while having FUN with science.

Discovery Center Classroom Programs

Each Discovery Center Classroom Lab models one 45-minute classroom period that aligns with the Connecticut Science Framework and supports science practices within the Next Generation Science Standards.



More new NGSS offerings listed online:
▶ CTScienceCenter.org/DiscoveryCenter

KINDERGARTEN

- ▶ CT K.3 Weather

GRADE 1

- ▶ CT 1.1 Relative Positions

GRADE 2

- ▶ CT 2.1 States of Matter
- ▶ CT 2.2 Plants

GRADE 3

- ▶ CT 3.1 Properties of Matter
- ▶ CT 3.4 Earth's Resources

GRADE 4

- NEW!** ▶ NGSS 4-LS1.A
Structure and Function

- ▶ CT 4.3 Erosion
- ▶ CT 4.4 Electricity and Magnetism

GRADE 5

- NEW!** ▶ NGSS 5-PS1.B
Chemical Reactions

- ▶ CT 5.1a Sound
- ▶ CT 5.1b Light
- ▶ CT 5.2 Senses
- ▶ CT 5.2 Judgment

GRADE 6

- ▶ CT 6.2 Abiotic Factors
- ▶ CT 6.3 Meteorology

GRADE 7

- ▶ CT 7.2b Organ Systems
- ▶ CT 7.3 Landforms

GRADE 8

- ▶ CT 8.1 Forces and Motion

GRADE 9

- ▶ CT 9.1 Energy Transformations

Discovery Center Lab Programs (per person)

Add a Classroom Program	\$7.50
Add a Space Lab Program	\$9.50
Add an Enrichment Program*	\$15.00

* Discovery Center Enrichment Programs have limited availability with 50 students maximum per program, per day. Please call for availability.

Scheduling:
Complete and submit the Reservation Request Worksheet:
▶ CTScienceCenter.org/BookNow

For more information, please call (860) 520-2150.

Discovery Space Lab Program

This 60-minute program takes place in our unique immersive lab.

GRADE 5

- ▶ CT 5.3 Energy through Time and Space

Discovery Center Enrichment Programs

90-minute Discovery Center Enrichment Programs give students hands-on experience in advanced concepts using sophisticated equipment and techniques.

- | | |
|---|--|
| ▶ Robot Trainers (Grades 3–4) | ▶ Robot Makers (Grades 5–12) |
| ▶ Energy City (Grades 5–12)
Sponsored by Connecticut Natural Gas | ▶ Scratch (Grades 6–8) |
| | ▶ Be a Molecular Biologist (Grades 6–12) |





Outreach Programs

We bring science to you

Outreach Programs are a mix of science demonstrations and hands-on activities that spark students' scientific curiosity. All programs are aligned with Connecticut Science Framework standards and are designed as pre-visits to our Discovery Center Labs.

Classroom and Enrichment Programs (per session)

Classroom or Enrichment Program for each topic ¹	\$250
Add an additional session of the same topic ²	\$200

¹ Each individual topic is \$250 each, however additional sessions of the same topic can be booked for \$200 more per session.

² Up to four program sessions may be booked and must all be delivered in the same day.

Please note: Programs require tables and chairs, access to water and/or electricity, and 30 minutes for set up and clean up. Travel charges apply.

Scheduling: Complete and submit the Reservation Request Worksheet:
[▶CTScienceCenter.org/BookNow](https://CTScienceCenter.org/BookNow)

▶ Outreach Classroom and Enrichment Programs

We bring fun, hands-on science activities to your classroom with these programs that accommodate up to 25 students and last 50 minutes:

CT K.3 Weather	CT 3.4 Worm World	CT 6.2 Abiotic Factors: Soil, Water and Plants
CT 1.1 Shadows and Positions	CT 4.3 Where Does Water Go?	CT 6.3 What Makes Weather
CT 2.1 Mystery Detectives	CT 4.4 Is it Magnetic?	CT 7.3 Landforms in Connecticut
CT 2.2 Seeds	CT 5.1a Good Vibrations	CT 8.1 Bouncing Around
CT 3.1 What's This?	CT 5.1b Light Up Your World	
CT 3.3 Let's Rock!	CT 5.2 Sense-itivity	

Outreach Enrichment Programs can be adapted for all grade levels. For more details, call (860) 520-2165.

For more information on Outreach Programs visit:

▶CTScienceCenter.org/Outreach

▶ Assembly Shows

45-minute assembly-style shows are designed to get students excited about science in a fun and interactive way. Shows are available for groups of 100–250.

- ▶ The Science of “Suds” (Grades Pre-K–5)
- ▶ Stuffee: Your Amazing Body (Grades Pre-K–5)
- ▶ Forces and Motion (Grades 6–8)
- ▶ RoboScience (Grades 3–12)

▶ Activity Stations

Host a Science Night for families or a Science Carnival during the school day to complement your school's curriculum. Select from the following menu of stations (minimum of two). These programs can accommodate audiences of 25 to 100 participants. Please be sure to mention audience size when booking.

- ▶ Electricity (Grades K–9)
- ▶ Dry Ice (Grades K–9)
- ▶ Hovercraft (Grades K–9)
- ▶ Polymers (Grades K–9)
- ▶ Air Pressure (Grades K–9)
- ▶ Bubbles (Grades K–9)
- ▶ Black Light (Grades K–9)

▶ Family Science

Family Science is an informal science education program that gives children and their caregivers an opportunity to work and learn together. During Family Science events, children and caregivers work cooperatively in pairs and small groups to solve problems and “talk science” while engaged in 18 different activities. Hands-on activities that use easy to find, inexpensive materials let families

More Outreach Programs

Assembly Show	\$500 per show
Activity Stations*	\$250 per station
Family Science Daytime	\$250 for 35–50 participants \$300 for 51–85 participants
Family Science Evening (after 6PM)	\$300 for 35–50 participants \$350 for 51–85 participants

* Black Light and Polymer Activity Stations have a \$50 materials fee.

Please note: Travel charges apply.

Scheduling: Complete and submit the Reservation Request Worksheet:
[▶CTScienceCenter.org/BookNow](https://CTScienceCenter.org/BookNow)

explore the ways in which science plays a role in everyday life. Families can discover how to lift a cereal box with just a single sheet of paper in “Breakfast Lift”, create a musical instrument in “Strumming”, and much more. With instruction materials available in both English and Spanish, these fun experiences build skills, confidence, and excitement about science learning.

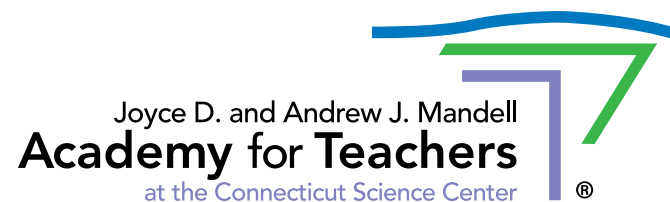


Mandell Academy for Teachers

Powerful Professional Development

The Joyce D. and Andrew J. Mandell Academy for Teachers provides professional development programs for educators, offering training that supports rigorous science, technology, engineering, and math (STEM) instruction and Next Generation Science Standards (NGSS). Our programs transform classroom instruction, giving teachers the skills, tools, and confidence to increase interest and performance significantly in the sciences as well as other subjects.

Offerings range from multi-day workshops and week-long classes, to multi-year, full-school engagements with embedded Connecticut Science Center STEM Education Professionals for schools and leaders who have a vision for significant, lasting transformation in their teaching and learning environments.



For more information on professional development for educators visit:

► CTScienceCenter.org/Mandell



► Next Generation Science Exemplar System

Launched in partnership with the Connecticut State Department of Education, NGSX helps teams of K–12 science educators apply pedagogical shifts described in the Framework for K–12 Science Education and the Next Generation Science Standards to their own teaching.

Browse dates and sign up at
► CTScienceCenter.org/Nextgen



► Engineering is Elementary® Workshops

Engineering is Elementary® (EiE®) integrates engineering and technology with science, language arts, social studies, and math via storybooks and hands-on design activities for 1st through 5th graders.

Browse dates and sign up at
► CTScienceCenter.org/EiE



► Inquiry for Teaching and Learning Series

Our professional development in inquiry-based learning and teaching helps you transform classroom teaching using students' natural curiosity. The series includes week-long immersion workshops, as well as an annual follow-up conference.

Browse all upcoming workshops at
► CTScienceCenter.org/Inquiry, or contact
Cheryl Tokarski, Director of the Mandell Academy for Teachers, at
ctokarski@CTScienceCenter.org.



General Information for School Groups

Design Your Field Trip online:

► CTScienceCenter.org/FieldTrips

Reservation Center
 Phone: (860) 520-2150
 Email: reservations@ctsciencecenter.org

Payments

- Full payment is due 30 days before your scheduled visit. Failure to submit payment, or make payment arrangements, may result in the release of your reservation. Please contact the Reservation Center if you need to make alternate payment arrangements.
- Accepted forms of payment include organizational check, credit card, or cash. Please note that purchase orders are not accepted.

Arrival

- Science Center staff will greet your group at your bus(es) when you arrive. For your convenience, we will provide bus driver instructions to drivers upon arrival.
- Bus Parking at the Market Street Lot is \$10 per bus.
- We recommend building in extra time for your arrival in anticipation of morning traffic.
- Backpacks, coats, and other personal belongings should be left on the bus, as there is no storage for such items within the Science Center. The Connecticut Science Center is not responsible for lost or stolen items.
- Teachers and chaperones are responsible for student behavior. We reserve the right to ask your group to leave if your group displays inappropriate behavior or is disrespectful to Science Center exhibits or guests.

Lunch

- We recommend that all groups joining us for lunch, request a lunch room when booking. In fair weather, groups may eat outside. However, in the event of inclement weather, the Science Center does not have alternative indoor lunch venues.
- If you are scheduled for a lunch time, please have your lunches ready for collection when you exit the bus.
- Lunches must require no refrigeration.

Departure

- Please be sure your entire group is ready and waiting at the main entrance on Columbus Boulevard at least 10 minutes prior to your scheduled departure time.

Cancelling or Rescheduling

- If you must cancel or reschedule your trip, please call the Reservation Center at least 1 week in advance. Your trip may be rescheduled for up to one year from the scheduled date.
- For same-day emergency cancellations, or if you will be late, please contact us on the emergency hotline at (860) 520-2151.

Inclement Weather

- During times of inclement weather, the best way to reach us is via email at reservations@ctsciencecenter.org.
- In the case of an impending weather event, you may contact us and provide alternative dates that you may attend. We will verify availability and reschedule your trip only if your organization officially closes.
- The Reservation Center checks official sources (news provider/school website) on mornings when inclement weather is expected.

Refunds

- Field trips are non-refundable. No refunds or credits will be issued if your group arrives with fewer guests than anticipated.
- If the Science Center is forced to cancel your reservation for reasons beyond our control (scheduling conflict, emergency closing, etc.), you will have the option of rescheduling or receiving a 100% refund.

Accessibility

- We are wheelchair accessible, with elevators linking all parking, gallery, and lab areas. Exhibit display panels are positioned for comfortable viewing from a wheelchair.
- If someone in your party requires a wheelchair, they are available on a first come, first served basis at our Security Kiosk.
- If you have other mobility requirements, please let us know when making your reservation so we can better accommodate your needs.
- Licensed guide and service dogs are always welcome in the Science Center.
- Infrared Assistive Listening Devices and a Rear Window Captioning system for theater presentations are available upon request.

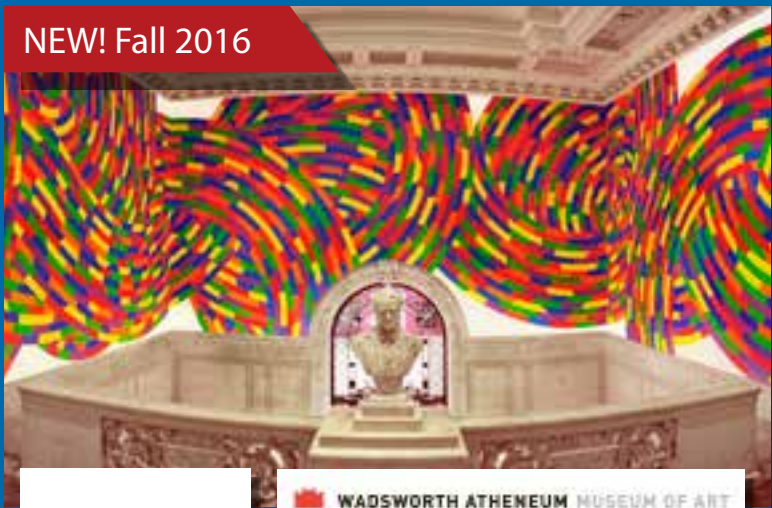


October 5, 2016



Join us for our next Sensory Friendly School Day, where lighting in the galleries is toned down, and exhibit sounds are turned down. Call (860) 520-2112 for more info.

NEW! Fall 2016



Two fieldtrips for one low price! Visit the Connecticut Science Center and tour the Wadsworth Atheneum for only \$13! The Wadsworth will be offering 2 tours for the Fall: CT Places & Things and European Art. Call (860) 520-2112 for more info.

