

2018–2019

Educator's Guide

Field Trip & Outreach Programs

*Visit our
newest
temporary
exhibits.*



711 N. Main St.
Rockford, IL 61103

815-963-6769

www.discoverycentermuseum.org

Fantastic Field Trips

Our interactive exhibits provide valuable hands-on experiences that match your curriculum and align with Next Generation Science Standard Disciplinary Core Ideas. Visit Discovery Center Museum and teach a lesson your students won't forget!

NGSS: ESS2.BD, ESS3.B, ETS1.AB, LS4.CD, LS3.A, PS2.AB PS3.ABCD, PS4.ABC

Length: approximately 2 hours (longer for add-on programs or lunchtime)

Basic Field Trip Cost: \$5 per students or chaperone (school/organizational staff are free)

Reservations: To begin the registration process, complete the online form at discoverycentermuseum.org/group-visit-request-form. For additional questions, you can also email fieldtrip@discoverycentermuseum.org. Our calendar fills well in advance. For the best choice of dates, please book 2-12 months before your planned visit.

Permanent Exhibits

Figure It Out

Flip, fold, and figure out patterns and relationships while exploring shapes and symmetry, sequences, shadows, and transformations. Use measurement and logic skills and connect to art, music, science, and society!

Simple Machines

Use a giant Archimedes' Screw to set in motion a whirlwind of activity on our transparent interactive wall. Lift yourself off the ground with a pulley and experience how to make work easier using simple machines.

Color and Light Newly Updated!

Capture your shadow on a wall, impress an image on the giant pin-screen, encase yourself in a giant bubble, project a moving rainbow-image of your body, write with light, play with shadows, and tease your brain!

Get the Message

Try your brush at virtual cave art, signal a crane operator, puzzle over expressions, send a message in Morse, decode a traffic sign, anchor the news and make the front page!

Ag-Zibit

Explore science and technology on the farm from simple machines to GPS, and discover how agriculture affects all our lives everyday! Climb aboard the tractor, study live bees, gather eggs, milk the cows, and more.

Air & Flight Newly Updated!

Soar with science as you float a ball on an invisible cushion of air, see the mechanics of airplanes in action, feel a vortex, and experiment with wind.

Rockford Astronaut Janice Voss

Get a first-hand view of space flight, examine astronaut accessories, design your own mission patch, and find out what inspired Janice to reach for the stars.

Wild Weather

Touch a tornado, create the coriolis effect, model the swirl of planetary weather, measure the sun's shadow on the earth in real time, and build sand dunes.

Discovery Park


Navigate through the outdoor park to play with forces, motion, simple machines, optical illusions, and more! Availability is seasonal / weather dependent.

Body Shop

Get your muscles moving, measure your heart rate, test your strength and agility, play games with your brain, design a nutritious meal, examine genetic traits, see the inner workings of the human body, and more!

Power of Electricity

Turn body power into electrical power, feel the force and find the link between motion, magnets, and electricity! Harness the power of wind, assemble a circuit, dial up some solar energy, and witness stunning electrical phenomena!

Sponsored by  **ComEd**
the Edison Company

Team Up! Explore Science & Sports

Play virtual-reality soccer, clock the speed of your pitch, launch a tennis ball, try on sports equipment, measure bounces, and test for rotational inertia.

Tot Spot Gallery

Recommended for grades PreK-K.

This exclusive area allows children 6 years and younger to take the lead with exploration, imagination, and creativity. Visit Ginny's House, work on the family car, take a trip on Engine #9, experiment with water, build something in the construction zone, and watch wind and gravity in motion. Our role-playing themes change throughout the year.

This year's schedule includes:

- Grocery Store/Bank - Fall 2018
- Children's Hospital **NEW!**
- Treehouse Adventure **NEW!**

Explore backyard nature in this new role play area! Climb into a treehouse, dress up in an animal costume, crawl through a log, hide in a cave, fish from a boat or bridge, roast marshmallows, eat a camp meal, and spot animals hiding in woodland murals.

Careers Kiosks



Learn about jobs from the people who do them! Computer kiosks feature videos, photos, and information for a variety of career fields, including scientist, chef, doctor, engineer, machine operator, baker, artist, graphic designer, and many others. Graphic panels throughout the exhibit galleries feature people in occupations that relate to those exhibits.



Special Exhibits

Comets, Asteroids, Meteors **GREAT BALLS OF FIRE!**

Great Balls of Fire: Comets, Asteroids, and Meteors

Dates: September 18-December 16

Length: 30 minutes

Cost: \$6/person (\$5 museum admission + \$1 special exhibition)

There's more in outer space than stars and planets! Take yourself on an astronomical adventure as you climb into a "spaceship" and blast off to the asteroid belt and Jupiter on a mission to gather data about asteroids and comets. Role play as an "explorer-in-training" to gather data about differences in asteroids, meteors, and comets. Interactive experiences will help students:

- Find out where comets come from and how they are formed.
- Experiment with the forces that influence the path of an object through the solar system.
- Determine the positioning of asteroid belts and comets when you create a solar system of your own.
- Judge whether those Hollywood movie scenes are science or fiction.

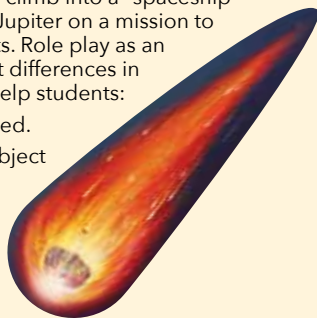
Meanwhile, find out what happens back on Earth with an interactive look at meteors and impacts through a variety of experiences. Did the catastrophic event that did-in the dinos come from outer space, and could it happen again? Find out if meteor showers are caused by chunks of rock or bits of dust. Get the scoop on important NASA missions, and perform scientific tests to see if a suspected rock is a fallen meteorite...or a "meteor wrong".

Premier Sponsor:  **WOODWARD**

Additional Sponsors: Kiwanis Club of Rockford; Aqua-Aerobic Systems; Kjellstrom Family Foundation of CFNIL

NGSS: ESS1.A, ETS1.ABC, PS1.A, PS2.AB, PS3.B, PS4.BC

*See our Space Explorers STEM Lab on the next page for a great addition to your field trip to *Great Balls of Fire*.



Fisher-Price presents

THOMAS & FRIENDS EXPLORE THE RAILS

Sponsored by **3M**

Thomas and Friends: Explore the Rails

Dates: January 12 - May 12

Length: 30 minutes

Cost: \$7/person (\$5 museum admission + \$2 special exhibition)

In *Thomas & Friends: Explore the Rails*, children interact with the familiar faces and sights from HIT Entertainment's popular series. Designed for children 2 through 7 (and their adult caregivers), the exhibit combines exciting play opportunities with important concepts in Science, Technology, Engineering, and Math (STEM), and an emphasis on developing 21st century skills. These ideas are woven and layered throughout the exhibit, creating an experience that speaks to a diversity of interests, age groups, and learning styles.

As they travel through the exhibition, children help Thomas and his friends solve a variety of challenges. These interactive opportunities range from simple sorting and shape identification to more complicated engineering obstacles. As children confront new challenges and test their skills, the smiling faces of Thomas, Percy, and others are there to offer encouragement and remind children of how "useful" we all are.

NGSS: K-2-ETS1, PS1A, PS2A

ILS Math: K.CC, K.OA, K.MD, K.G, 1.OA, 1.MD, 1.G, 2.OA, 2.MD, 2.G

IELDS: 6.A-DEC, 7.A-EC, 9.A-EC, 9.B-EC, 11.A-EC, 12.C-EC, 12.D-EC



Programs to Enhance Your Field Trip

STEM Labs

Add on to your visit and focus your students on a science theme. Each engaging workshop features activities, investigations, and demonstrations that match your curriculum goals and reinforce science concepts.

Length: 45 minutes

Cost: \$55/class up to 30 students

Space Explorers NEW!

Grades: 2-6

Students observe and manipulate force and motion as they simulate what space scientists do! Hands-on investigations include playing with gravity, engineering a rover, and using magnetic force to alter the trajectory!

NGSS: PS2.AB, PS3.ABC, ETS1.ABC, ESS1.A

Simple Machines

Grades: 2-8

An engaging overview of simple machines takes off as students experiment with wheel and axle, gear assemblies, pulley contraptions, and more.

NGSS: PS2.AB, PS3.C

Color and Light

Grades: K-8

Explore the properties of light, fool your vision, dissect a rainbow, experiment with invisible light, and create your own kaleidoscope.

NGSS: ETS1.ABC, PS1.A, PS4.AB

Physics of Fun

Grades: 1-8

Students make use of engineering skills as they design and test their own roller coasters in this exploration of kinetic and potential energy. Great program for team building!

NGSS: ETS1.ABC PS2.AB, PS3.ABC

Illinois SEL standards: 2C.1b, 2C.2b, 2C.3b

Microscopic Adventures

Grades: 3-8

Use real microscopes, prepare slides, and investigate the world of the very small. Examine cell structures and locate living organisms in unexpected places.

NGSS: ETS1.ABC, LS1.A, PS1.A, PS4.AB

Wild Weather

Grades: K-8

Witness the water cycle and see how this process leads to sun and storms! Instant clouds and touchable lightning unlock the complex phenomena of weather!

NGSS: ESS2.CD, ESS3.B, PS1.AB, PS3.AB



Slime & Chemistry

Grades: K-8

Measure, pour, and mix real chemicals to produce reactions, investigate solids, liquids, and gases, and concoct slime!

NGSS: ETS1.ABC, PS1.AB, PS3.B



Junior STEAM Labs

Add on to your visit and focus your students on a science theme. Each engaging workshop features activities, investigations and demonstrations that match your curriculum goals and reinforce science concepts.

Length: 30 minutes

Cost: \$50/class up to 20 students

Senses of Science

Grades: PreK-K

Use touch, sight, and hearing as exploration tools! This hands-on class is the perfect environment for kids to ask questions, discover answers, and experience science.

IELDS: 11.A.ECa, 12.C.ECa

NGSS: LS1.AD

All Shapes and Sizes

Grades: PreK-K

Students get a brain-workout with this assortment of patterns, puzzles, shapes, and sorting designed to stimulate creative thinking. Kids won't even realize they're doing math!

IELDS: 9.A.ECa, 11.A.ECe, 25.A.ECd

NGSS: ETS1.ABC, PS1.A

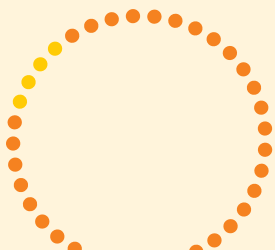
Light and Sound

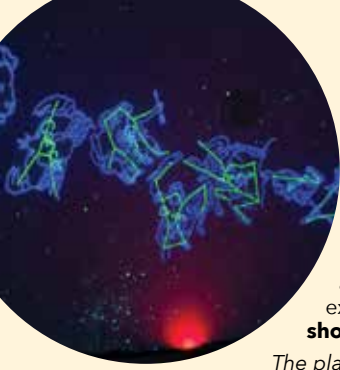
Grades: PreK-K

Make a color viewer, experiment with shapes and shadows, and invent a sound maker for loud and soft, high and low!

IELDS: 11.A.ECa, 12.C.ECa, 25.A.ECc

NGSS: ETS1.ABC, PS4.AB





Discovery Planetarium

Experience the night sky in Discovery Center's planetarium! Pick a show tailored to your group's interest and ability level to explore planets, stars, space exploration, and constellations. **These shows are designed for our in-house planetarium.**



The planetarium is a gift from the Kiwanis Club of Rockford.

NGSS: ESS1.AB, PS1.A, PS2.AB, PS4.BC

IELDS: 12.B.ECb, 13.B.ECa

Length: 30 min **Cost:** \$30 per show up to 30 students **Grades:** PreK and up

Big Bird's Adventure

Grades: PreK-1

Big Bird and Elmo explore the night sky and discover that we see the same phases of the moon as our friends across the world!

Animals of the Night Sky **NEW!**

Grades: PreK

Come meet the many animal constellations that you can find in our night sky. This live presentation will introduce our youngest stargazers to some familiar animals hidden among the stars.



Discover the Night Sky

Grades: 2-8

This live presentation walks students through the sky tonight and points out moon phases, planet locations, and constellation identification. Seasonal constellations are illustrated using stories from Greek mythology.

Earth, Moon, and Sun

Grades: 3-8

The Native American mythical Coyote's incorrect notions about basic astronomy prompt explanations. Animation and real images come together to teach about daily motion of the sun, phases of the moon, seasonal changes in star locations, and eclipses.



I wanted to let you know that we had a great time yesterday! The museum and activities were very age-appropriate and awesome for our kids. The time at each area was perfect.

I especially liked your tour guides. Brian was awesome! He played with the kids and offered information to them, and he was a great time-keeper, always giving us a countdown which was very helpful. You can tell he enjoys what he is doing.

We all loved Corrine. She was so fun and creative! She did a great job with the slime experiment, and the kids just loved "bob" -her minion.

Thanks for all you did to organize it, and make it such a great time."

Suzanne Brancato
2nd Grade Teacher
May Chesak Elementary

Outreach Programs

Our Outreach Programs bring the excitement of science learning to you! Whether you are educating one small class or the entire school, we offer a wide variety of programs which meet the needs of your students, enhance your curriculum, and line up with *Next Generation Science Standards Disciplinary Core Ideas*.

Some programs available in Spanish.

To begin the registration process, complete the online form at discoverycentermuseum.org/outreach-request-form. For additional questions, you can also email outreach@discoverycentermuseum.org or call 815-972-2836. Our calendar fills well in advance. For the best choice of dates, please book 2-12 months before your planned event.

Hands-On Classes

Engage your brain and immerse your hands in science with our Hands-On Classes! Whether introducing a topic, reviewing for a test, or investigating for fun, every student will be excited about learning science and begging for more!

Grades: vary by topic **Length:** 60 minutes **Participants:** 30 maximum

Cost: \$140 (\$70 for each additional class*) Travel fees may apply.

Simple Machines **

Grades: 2-8

Investigate mechanical advantage and get the scoop on force and motion with hands-on practice using a giant lever, pulleys, and LEGO gears!


NGSS: ETS1.ABC, PS2.AB, PS3.AC

Electric Circuits

Grades: 3-8

Demonstrate an understanding of circuits using our Snap-Circuit Kits that light bulbs, spin motors, and more!

NGSS: ETS1.ABC, PS2.B, PS3.AB

Sponsored by  **ComEd**
An Exelon Company

Slime & Chemistry

Grades: K-8

Measure, pour, and mix real chemicals to produce reactions, investigate solids, liquids, and gases, and concoct slime!

NGSS: ETS1.ABC, PS1.AB, PS3.B

Zombies!

Grades: 3-8

Find out how the brain works, find the origin of an infectious zombie virus, and create a cure for the undead.

NGSS: LS1.AD, LS2.B

Engineering Challenge

Grades: 3-8

Design and construct your own contraption to fly, spin, or stay put, then test it in our vertical wind column.

NGSS: ETS1.ABC, PS2.AB, PS3.AB

Sounds of Science

Grades: K-6

Get splashed by a sound, invent some wacky noise-makers, and use a straw to discover the connection between size and pitch.

NGSS: PS2.AB, PS4.A ETS1.ABC

Junior Hands-On Classes

These hands-on experiences feature activities that allow our littlest learners to explore at their own pace with amazing materials which stimulate senses and excite minds!

Toddler classes available upon request.

Grades: PreK **Length:** 30-45 minutes **Participants:** 20 maximum

Cost: \$110 (\$50 for each additional class*) Travel fees may apply.

Forest Friends **NEW!**

Explore natural wonders of the forest by playing with trees and imagine what it's like to be a woodland creature.

IELDS: 12.A.ECa, 12.B.ECb, 26.B.ECa

Balancing Act **NEW!**

Children explore balance while developing fine and gross motor skills in this topsy-turvy class.

IELDS: 2.A.ECa, 13.B.ECa, 19.A.EDb, 19.B.ECb

Sun & Moon **NEW!**

Play with light and dark, day and night, shadow and reflection as we learn about our friendly neighborhood celestial bodies.

IELDS: 12.A.ECb, 12.E.ECa

Wheels in Motion **NEW!**

Make a commotion while exploring the exciting world of locomotion.

IELDS: 11.A.ECf, 12.D.ECb





Don't see quite what you are looking for? Contact us and our team of educators will work to meet your needs.

Portable Planetarium**

We'll bring you the moon and stars with our inflatable StarLab Portable Planetarium! Presentations are tailored to your grade level and unique to this traveling program.

Grades: K-8

Length: 45 minutes

Participants: 30 maximum

Cost: \$140 (\$60 for each additional show*) Travel fees may apply.

Show Themes: The Sky Tonight, Ancient Stories in the Stars, Native American Lore, and Our Solar System.

NGSS: ESS1.AB



Science Carts

Roll science right into your classroom to maximize student participation and discussion!

Grades: 1 - 8

Length: 45 minutes

Participants: 30 maximum

Cost: \$140 (\$60 for each additional class*) Travel fees may apply.

Weather Cart

Witness the water cycle and see how this process leads to sun and storms! Instant clouds and touchable lightning unlock the complex phenomena of weather!

NGSS: ESS2.CD, ESS3.B, PS1.AB, PS3.AB

Human Body Cart

Explore digestive, respiratory, and circulatory systems of the human body! See real lungs inflate, hang out with Mr. Guts, get your heart pumping, and more!

NGSS: LS1.AD, LS2.B

Electricity Cart **

Explore where our electricity comes from. Generate and transmit energy, and de"light" in static electricity.

NGSS: ETS1.ABC, PS2.B, PS3.AB

Sponsored by



Thanks so much for bringing the planetarium to us. You always do a great job of answering the students' questions and encouraging them to keep thinking!

Angie Bahling
3rd Grade, Meehan School

* Additional program discount applies for programs of the same topic held on the same day at the same location.

** This program has a special space requirement.

*** Expanded age range available for younger participants.



Family Fun Programs

You provide tables and volunteers; we bring everything else! Ideal for schools, libraries, and community centers, these hands-on sessions feature activity stations of experiments, games, math, science, and make-and-take projects designed to engage and interest all ages!

6–10 stations

Program time: 60–90 minutes
Cost: \$400; Travel fees may apply.

Participants: 300 maximum

2–5 Stations

Program time: 30–60 minutes
Cost: \$250; Travel fees may apply.

Participants: 150 maximum

STEAM Powered Stories **NEW!**

Explore Science, Technology, Engineering, Art, and Math through activities inspired by the real life stories

found in child-friendly biographies during this STEAM themed literacy night.

NGSS: ETS1.ABC, PS1.A, PS2.AB, PS3.AB

Whoosh It's Back!

Experiment and play with the amazing properties of air! Create flying contraptions, fold a kite that can fly inside, launch a rocket, and more!

NGSS: ETS1.ABC, PS1.A, PS2.AB, PS3.AB



Disaster!

Erupt a mini volcano, experience the shocking effects of lightning, pack your survival gear, and cure the zombie epidemic! Are you prepared?

NGSS: ESS2.B, ESS3.B, ETS1.ABC, LS1.AD, LS2.B, LS3.A

Fun & Games

Play games from around the world, create a mosaic masterpiece, fashion an intricate design, create 3-D shapes and more. Shhh: don't tell them it's math!

NGSS: ETS1.ABC, PS1.AB



Little Scientists

Manipulate magnets, compare colors, and fool with physics! Explore the world through activities designed for families with children grades **PreK-2**.

NGSS: ESS2.C, ETS1.ABC, LS1.AD, PS1.A, PS2.AB, PS4.AB

Assembly Programs

These dynamite demos feature experiments, investigations, and explanations woven together in a stimulating presentation.

Grades: K-8

Length: 30–45 minutes

Participants: 150 maximum

Cost: \$300 (\$250 additional show*) Travel fees may apply.

The Liquid Nitrogen Show **

Excitement goes up as the temperature drops in this ultra-cold show! Witness instant phase changes and identify the differences in states of matter as they succumb to the frigid world of liquid gas!

NGSS: PS1.AB, PS3.AB

The Captivating Chemistry Show

Solids, liquids, and gases combine to create chemical changes that look like magic. Chemistry becomes apparent using surprising reactions that create colors, fabricate foam, and explode!

NGSS: ESS3.A, PS1.AB, PS2.B, PS3.ABCD



Forces in Motion ** Newly Updated!

Amazing feats come together to weave the story of Newton's Laws of Motion in this compelling program! From collisions to physics games, this is one memorable science lesson!

NGSS: ETS1.ABC, PS2.AB, PS3.ABC



Afterschool Enrichment / Science Club Activities

We bring the excitement of science learning to you! Our active programs provide all materials plus playful engagement for your students and family groups. Choose from these topics for hands-on science fun!

Grades: vary by topic

Length 45-60 minutes

Participants: 30 maximum

Cost: \$140 (\$70 each additional program*) Travel fees may apply.



Lots of LEGOs

Grades: 1-8

Investigate gears and forces, and use America's favorite bricks to construct a merry-go-round or windmill that really works!

Blast Off **

Grades: 1-6

Explore forces and motion with these paper rockets that launch using air power, and fly so far they hit the gym wall!

Magnetic Attractions

Grades: K-2

Test to see what sticks, measure magnetic strength, and construct a magnetic contraption.

Thrill Ride **

Grades: 1-8

Experiment with potential and kinetic energy as you invent a rollercoaster, and take a marble on a wild ride!

Make the Connection

Grades: 3-8

Mess around with circuits to make things light up, spin, and maybe even fly!

Build It Bigger ***

Grades: K-6

Put together everyday objects and special materials to create bridges and towering structures.

Ooey Gooey Science

Grades: K-8

Solids, liquids, and gases come together to create amazing reactions and slippery slime.

Fling and Wing

Grades: 2-6

Learn aerodynamic secrets as you assemble and launch some crazy shapes. You won't believe these gadgets fly!

Good Vibrations ***

Grades: K-6

Get splashed by a sound, invent some wacky noise-makers, and use a straw to discover the connection between size and pitch.

Engineering Adventure ***

Grades: K-8

Design and construct your own contraption to fly, spin, or stay put, then test it in our vertical wind column.

Rolling Ramps ***

Grades: K-2

Construct a crazy coaster or simulate a sensational slide with our set of ramps and balls of all sizes.



Thank you so much for sharing this wonderful program with us. The students and families (teachers too) loved it. We had a nice crowd. Thank you again and share my appreciation with Maggie from Discovery Center as well. Hope we can do this again next year. :)

Carolyn Kloss
Principal at Hillman Elementary School
Rockford, Illinois

Options at Discovery Center		Grade level	Amount of time	Maximum participants	Fees	Please contact these people directly; email works best for us http://www.discoverycentermuseum.org/group-visit-request-form
Regular Field Trip						
Great Balls of Fire + Museum September 18 – December 16	Any	2 hours	120	\$5 / person		
	2-8	2 ½ hours	120	\$6 / person		
Thomas & Friends + Museum January 12 – May 12	PreK-1	2 ½ hours	120	\$7 / person		fieldtrip@discoverycentermuseum.org or call 815-972-2826
STEM Labs	varies	45 min	30	\$55 / class		
Junior STEAM Labs	PreK-K	30 min	20	\$50 / class		
Discovery Planetarium	varies	30 min	30	\$30 / class		
Lunchroom	All		60	\$10 / session		
Options for Outreach						
Hands-on Classes	varies	1 hour	30	\$140 / \$70		http://www.discoverycentermuseum.org/outreach-request-form
Junior Hands-On Classes	PreK	30-45 min	20	\$110 / \$50		
Portable Planetarium	K-8	45 min	30	\$140 / \$60		
Science Carts	1-8	45 min	30	\$140 / \$60		outreach@discoverycentermuseum.org or call 815-972-2836
Family Fun Programs	varies	30-90 min	300	\$250-\$400		
Assembly Programs	K-8	30-45 min	150	\$300 / \$250		
Afterschool / Enrichment	varies	45-60 min	30	\$140 / \$70		
Additional travel fees may apply.						

Our calendar fills well in advance. For the best choice of dates, please book 2-12 months before your event.