



2018–2019

# Field Trip PLANNER

CARNEGIE  SCIENCE CENTER





## Spark a Love of Learning with **SCIENCE**

*“Tell me, and I’ll forget. Show me, and I might remember.  
Involve me, and I’ll understand.”*

A field trip to Carnegie Science Center isn’t just about a day of fun at one of the most dynamic institutions in Pittsburgh. It’s a day packed with opportunities for STEM learning that will resonate with students.

At the Science Center, students learn by getting involved in a wide range of unique and inspiring hands-on activities.

Our exhibits demonstrate and reinforce what’s being taught in the classroom. Our live shows and demonstrations will take students everywhere from a journey through the human body to a tour of the cosmos. Along with being loaded with science content themes, a day at the Science Center can benefit test preparation, allow specialized “deep dives” into a topic, and foster a love of science that will motivate your students to succeed.

**Teachers visit free, thanks to Highmark Teacher Preview!**



We know it can be difficult to see everything Carnegie Science Center has to offer when you have students in tow. That’s why we offer free admission once a year to preschool through 12th-grade teachers from schools located in the following states: Pennsylvania, Ohio, West Virginia, New York, and Maryland. Use this visit to familiarize yourself with our exhibits and prepare for an upcoming field trip.

Visit [CarnegieScienceCenter.org/HighmarkTeacherPreview](https://CarnegieScienceCenter.org/HighmarkTeacherPreview) to complete the registration form, and bring your confirmation email and educator ID to the Science Center on the day of your visit. Special exhibitions, The Rangos Giant Cinema films, laser shows, and other fee-based programs are not included. The free visit cannot be used on the day of your field trip.

# Engineer Your Visit

Whether you want a fun, educational outing for your class or want to cover specific content areas, we can help you design the perfect day!



## Sample Field Trip Itinerary

**9:30 am:** Arrival/Check-in

**10 am:** Movie in The Rangos Giant Cinema

**11 am:** Explore the exhibits

**12:30 pm:** Lunch

**1 pm:** Travel the galaxy in Buhl Planetarium

**1:30 pm:** More time to explore

**2:30 pm:** Back on the bus!

## What Can My Group Do?

### Visit our exhibits

Enjoy four floors of fun—more than 200 interactive exhibits. Experience physical science in Highmark SportsWorks®. Explore the human body in BodyWorks or river ecosystems in H2O! Then dive into history on our USS Requin (SS 481) Submarine.

### Add a live show

Enjoy a level of learning you can't get in the classroom! Our three demonstration theaters offer programs featuring explosive chemical reactions, amazing explorations of biology, and electrifying displays of engineering.

### Plan for the Planetarium

Add a planetarium show to your schedule, and take your class into the cosmos!

### Other possibilities include:

- The Rangos Giant Cinema educational films (see page 16 for details)
- Laser shows (see page 15 for details)
- See an international touring exhibition: THE ART OF THE BRICK, now through Monday, Jan. 7, 2019, and Da Vinci from Saturday, Feb. 16 to Monday, Sept. 2, 2019 (see pages 10–11 for details)

## Accessibility: Features for All

Carnegie Science Center welcomes all visitors. We assist visitors with disabilities in obtaining reasonable and appropriate accommodations, and in supporting equal access to services, programs, and activities. We welcome visitors in wheelchairs on the deck of our USS Requin (SS 481) submarine. Below-deck visits require full mobility. Hearing assistance devices are available for The Rangos Giant Cinema.

Please note that requests for accommodations should be made at least two weeks prior to your visit. For specific questions about wheelchairs, strollers, or other programmatic or equipment needs, see the ticket counter located on the first floor of the main building or contact Customer Service at 412.237.1641 or [info@carnegiesciencecenter.org](mailto:info@carnegiesciencecenter.org).

## Grade-by-Grade Guide

Learn about complete offerings when you call to book.

### Pre-K and Kindergarten

- Exhibits
- **NEW!** ABC's of Chemistry
- Zoo Plus Two
- Move It! Move It!
- Taste the Rainbow
- One World, One Sky: Big Bird's Adventure

### Grades 1–2

- Exhibits
- Freeze
- Wheel of Science
- Expedition: Solar System
- One World, One Sky: Big Bird's Adventure
- Expedition: Solar System
- Week of Code

### Grades 3–4

- Exhibits
- Freeze
- Wheel of Science
- Sounds Like Science
- It's Alimentary, Watson
- Brain Power
- The Energy Show!
- Expedition: Solar System
- Astronaut
- Mars Madness
- Cosmic Collisions
- Stars Over Pittsburgh
- SolarQuest
- Week of Code

*Turn for grades 5 and up*

## Grade-by-Grade Guide

### Grades 5–6

- Exhibits
- Freeze
- Wheel of Science
- Sounds Like Science
- It's Alimentary, Watson
- Brain Power
- The Energy Show!
- On Fire!
- Say Cheese!
- Expedition: Solar System
- Astronaut
- Mars Madness
- Cosmic Collisions
- Stars Over Pittsburgh
- Beginner's Guide to the Universe
- SolarQuest
- ChemFest
- Engineer the Future
- SciTech Days
- Week of Code

### Grades 7 and Up

- Exhibits
- It's Alimentary, Watson
- Brain Power
- The Energy Show!
- On Fire!
- Reactions in Action
- Physics Smash Lab
- Say Cheese!
- High Voltage
- Astronaut
- Mars Madness
- Cosmic Collisions
- Stars Over Pittsburgh
- Beginner's Guide to the Universe
- SolarQuest
- ChemFest
- Engineer the Future
- SciTech Days

## Booking and Pricing

Call 412.237.3400 or go online and submit a visit inquiry. We will help you book the trip that fits your schedule. If you are concerned about affording a field trip, talk to our team about grant opportunities.

### Chaperones

- **1 to 10:** For groups of school-age children, one chaperone per 10 students is admitted at no cost for group general admission.
- **1 to 5:** For groups of preschool children, one chaperone per five children is admitted at no cost for group general admission.
- Special exhibitions, laser shows, live demonstrations, and The Rangos Giant Cinema films are not included.

### Weekday Group Pricing

#### Monday–Friday admission rates:

**\$8 per person** for groups of 15 or more people ages 3 and over (making advance reservations). \* Membership cards are not valid for group admissions.

#### Weekday access:

- All four floors of hands-on exhibits
- Highmark SportsWorks®
- USS Requin submarine (seasonally, weather permitting)

#### Weekday add-on rates:

Add a live demonstration theater or Buhl Planetarium show for \$2 per person. Add a laser show for \$4 per person.

#### The Rangos Giant Cinema

Enjoy an educational movie for \$8 per person, or just \$5 per person as an add-on to group general admission.

#### International Touring Exhibitions

- As an add-on to general admission, visit THE ART OF THE BRICK for \$10 per person.
- Opening on Saturday, Feb. 16, 2019, add on Da Vinci The Exhibition for only \$5 per person.

### Weekend Group Pricing

#### Saturday–Sunday admission rates:

**\$10 per person** for groups of 15 or more people ages 3 and over (making advance reservations). \*

#### Weekend access:

- All four floors of hands-on exhibits
- Highmark SportsWorks®
- USS Requin submarine (seasonally, weather permitting)
- Buhl Planetarium shows (seating is first come, first served)
- Live demonstration theater shows (seating is first come, first served)

#### Weekend add-on rates:

Add a laser show for \$4 per person, or an educational film in The Rangos Giant Cinema for \$5.

**\*At least two weeks in advance.**

NOTE: Group reservations are not available for the extended holiday weekend after Thanksgiving and the week between Christmas and New Year's Day.



# Field Trip Add-Ons

## Group Boxed Lunches

- Groups of 15 or more people can preorder boxed lunches from our RiverView Café through our Culinaire catering team.
- Preorder your boxed lunches at least two weeks before the day of your scheduled visit. Keep in mind that you must make a group-visit reservation before ordering boxed lunches.
- Our boxed lunches can meet any dietary restrictions. If you have dietary restrictions and are able to provide specific information regarding such restrictions (i.e. “Five salads with no cheese”), please designate on the online order form.

If you have additional questions or concerns,  
call Nina Hamm at 412.237.3424 or email her at  
[HammN@CarnegieScienceCenter.org](mailto:HammN@CarnegieScienceCenter.org).

Payment is due prior to your visit in the form of one check, or single credit card (Visa, MasterCard, American Express or Discover). Someone from the Culinaire catering team will contact you regarding payment. Please also note that all items are subject to 7% sales tax. If your group is tax exempt, proof of exemption is required. Keep in mind that payment for your group reservation is separate from the boxed-lunch payment to Culinaire.

## Souvenir Bags from the XPLOR Store

Want the members of your group to have souvenirs of your visit to Carnegie Science Center but your time here is too limited to allow for individual shopping?

### Souvenir Bags — at Your Choice of Price

Your selection will be packaged in individual XPLOR Store bags. Please remember that prices are plus tax, unless you provide us with your tax-exempt ID number.

The XPLOR Store has the right to substitute an item of equal value for any out-of-stock item. In the descriptions below, “CSC logo” means the Carnegie Science Center logo. To place your order, or if you have any questions or need more information, please call 412.237.3418.



### \$2.50 bag includes:

**Option 1 #37431:**

Aero prop with CSC logo, CSC logo pencil

**Option 2 #37432:**

CSC logo pencil, suction ball, candy selection

### \$3 bag includes:

**Option 1 #37433:**

CSC logo pencil, jumbo glitter popper, candy selection

**Option 2 #37434:** CSC logo patch, color-changing pencil

### \$5 bag includes:

**Option 1 #37435:**

Mesmerizer key chain with CSC logo, Earth bounce ball

**Option 2 #37436:**

Glow-in-the-dark planet and stars, color-changing pencil

### \$8 bag includes:

**Option 1 #37437:**

CSC logo notebook with pen, color-changing pencil, aero prop with CSC logo

**Option 2 #37438:**

Jumbo space pencil with sharpener, squeeze globe, candy selection

# Frequently Asked Questions

## Questions?

For further insight regarding group visits, call 412.237.3400, or email [CustomerService@CarnegieScienceCenter.org](mailto:CustomerService@CarnegieScienceCenter.org).



## Reservations and Visit Preparations

### Is there a minimum size requirement for group rates?

Yes. The minimum is 15 people. This includes children ages 3 and up, teachers, and parents. If you have fewer than 15 people in your group, you can purchase general-admission tickets over the counter.

### Do I need a reservation to receive the group rate?

Yes. The only way to receive the group rate is to call at least two weeks in advance of your requested visit date. Our Call Center is open Monday–Friday, 9 am–5 pm, except for holidays. Call 412.237.3400.

### Are chaperones required? Do I need to provide chaperones to visit?

Yes. Groups with children under the age of 19 need to have a designated chaperone over the age of 19 to explore the building. We recommend a ratio of one adult per 10 children.

### Is there a dress code?

Carnegie Science Center and Highmark SportsWorks® have many activities and exhibitions that require some degree of physical participation. We strongly recommend comfortable, casual attire with sensible shoes. Please note: closed-toe/closed-heel shoes are required for the ropes course and climbing wall. Socks are required for the You-Yo.

### How do I pay for my visit?

Payment must be made on the day of your visit when you check in your group. We can accept only one lump-sum payment. We accept VISA, MasterCard, American Express, one check (payable to Carnegie Institute), or cash. Please note that cash should be consolidated to provide one payment to the cashier. Purchase orders are not accepted.

### Can members of my group pay separately and still get the group rate?

We do not sell individual group tickets. The only way to get the group rate is through the group leader at check-in.

### If there is bad weather, will you close?

In case of inclement weather, call 412.237.3400 and listen for a prerecorded message regarding hours.

### Is there a fee for parking?

Groups arriving by bus receive complimentary parking on a first-come, first-served basis. School vans, individual vehicles, etc., pay the Science Center parking rates. See page 20 for a parking map.

### What should I be prepared for on the day of my visit?

Check-in is located on the ground floor of our main building. Please have a final head count of adults and children. Staff will provide a brief orientation before weekday group visits and help you get started with your day. If you are bringing lunches, please have them in boxes or coolers labeled with your group name.



## Exhibits

*All four floors of hands-on exhibits and Highmark SportsWorks® are included in general admission!*

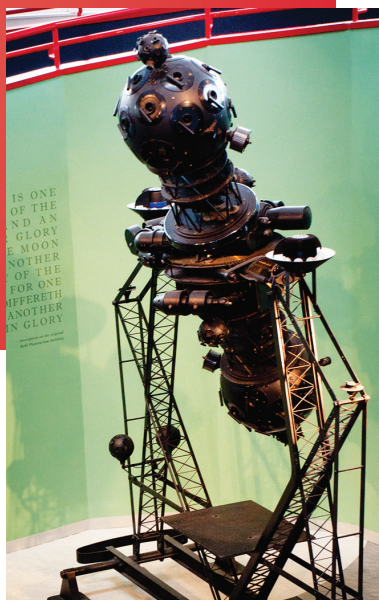


### SpacePlace

**CONTENT THEMES:** PHYSICAL SCIENCE, TECHNOLOGY, ASTRONOMY, ENGINEERING, ENVIRONMENTAL SCIENCE

Explore SpacePlace, and be an astronaut-in-training! Discover artifacts, mission patches, and even a flight suit. Learn about the effects that gravity and friction place on our environment, and complete tasks like a real astronaut at the Micro-G simulator.

Tour a two-story, walk-in replica of the International Space Station; see a 1/3 scale model of Hubble Space Telescope.



### Zeiss Model II Star Projector

**CONTENT THEMES:** HISTORY, SCIENCE AND TECHNOLOGY, HUMAN ENDEAVORS, ASTRONOMY

The Zeiss Model II Star Projector, used from 1939-1991 at the original Buhl Planetarium and Institute of Popular Science, has reappeared at the Science Center.

The exhibit features interactive exhibits and a 'time machine' where you can select any year from 1939 to today and see what was happening in the world of astronomy during that year.

*Made possible by: The Buhl Foundation*



### USS Requin (SS 481) Submarine

**CONTENT THEMES:** ENGINEERING AND TECHNOLOGY, HISTORY, MATHEMATICS, PHYSICAL SCIENCE, HUMAN ENDEAVORS

Dive into science aboard a real Cold War-era submarine! Interactive kiosks and recreated living quarters give visitors an authentic sense of how our country's Navy veterans lived and the technologies they used. The submarine operates on seasonal hours, weather permitting.

## Exhibits



### Miniature Railroad & Village®

*Presented by Klavon's Ice Cream Parlor*

**CONTENT THEMES:** HISTORY, HUMAN ENDEAVORS, ENGINEERING AND TECHNOLOGY, ENVIRONMENTAL SCIENCE, MATHEMATICS, EARLY LEARNERS

Be amazed as speeding locomotives travel western Pennsylvania's miniature landscape, while the seasons and days pass in the matter of minutes. This extraordinary exhibit features more than 2,000 miniature replicas and more than 100 animated characters and scenes. See why the Miniature Railroad continues to be a long-standing Pittsburgh tradition.



### roboworld®

**CONTENT THEMES:** HUMAN ENDEAVORS, MATHEMATICS, ENGINEERING AND TECHNOLOGY

Gear up for a bot-tastic time with more than two dozen exhibition stations all about how robots think, sense, and act. Challenge a binary being in a game of air hockey or basketball, and rub elbows with some of Hollywood's most famous robots.



### BodyWorks

*Presented by Allegheny Health Network*

**CONTENT THEMES:** HUMAN BIOLOGY, STRUCTURAL ENGINEERING, CHEMISTRY, HEALTHY LIFESTYLES AND HABITS

Our bodies are marvelous machines! BodyWorks uses interactive exhibits, live shows, and demonstrations to explore the blood, guts, bones, brains, senses, and mechanics that make us, well, us!

The exhibit explores our muscles and bones, heart and lungs, digestive system, brain and nerves, and body basics. Learn about the fluids that fill your body, the limits of the human form, and what parts of you can be replaced. Pump a heart, stretch your intestines, fool your senses, make your skeleton dance, see actual preserved human organs, and more!



## Exhibits

### H2Oh!

*Presented by Colcom Foundation*

**CONTENT THEMES:** BIOLOGY, ECOLOGY, ENVIRONMENT AND CONSERVATION, FLUID DYNAMICS

Take in the amazing view of the dramatic confluence of Pittsburgh's three rivers (Monongahela, Allegheny, and Ohio) from the exhibit gallery with newfound appreciation for our water.

Students will learn where our rivers come from and where are they going, as well as what lives in these waters, nests in these banks, and grows on these shores. Find the answers to questions such as: *What impact does my community have on the river? What impact do I have—personally, (and, for the next generation of Pittsburghers), through my water-supply choices?*



### Highmark SportsWorks®

**CONTENT THEMES:** PHYSICAL SCIENCE, BIOLOGY, HUMAN ENDEAVORS, HEALTH AND NUTRITION, SCIENCE AND TECHNOLOGY, ENGINEERING AND TECHNOLOGY

Highmark SportsWorks® provides the perfect opportunity to use kids' love of sports as a gateway to talk about the foundational science concepts related to sports, physical activity, and health. As your students roam the gallery, they will explore and discover the physics of sports, nutrition, and health, and try our exciting sports challenges. Your students won't just learn the science—they'll experience it!



### Little Learner Clubhouse—powered by PNC Grow Up Great®

**CONTENT THEMES:** PHYSICAL SCIENCE, EARLY LEARNERS

In this new exhibition, designed for children ages 6 and under, little learners explore our nature-inspired hub for free play and hands-on activities! This colorful exhibit gallery features a variety of interactive exhibits designed to foster scientific curiosity. Children can splash around the new River Table, and make real-world connections to our rivers and other water sources we use every day, or start a flurry of sound effects at The Button Wall. They can test sorting skills with red and green 'tomatoes' at The Tomato Stand using conveyors and vacuum tubes! And more!

### NETL Energy Zone

**CONTENT THEMES:** PHYSICAL SCIENCE, ENGINEERING AND TECHNOLOGY

Students will observe, experience, and quantify the scientific concepts behind electricity through a variety of activities. They can design an electric circuit; create a laser design; turn cranks to generate electricity to operate various light bulbs, a fan, or a hair dryer; and more!

Immerse your students in hands-on exploration that encourages open-ended inquiry and problem solving.



**Exciting Opportunity!**



**EXPLORE THE COMPLEX BEGINNINGS AND LIFETIME  
ACHIEVEMENTS OF DA VINCI**

**Saturday, Feb. 16, 2019–Monday, Sept. 2, 2019**

This blockbuster exhibition will engage your students with more than 60 inventions and machines brought to life from da Vinci's Codices, advanced anatomical studies, and world-renowned paintings. Discover his innovations in art, engineering, flight, hydraulics, music, and more!

Group Visit Cost (15+ people): \$8 per person to visit just *Da Vinci The Exhibition*, or \$13 per person (ages 3–18) for both *Da Vinci The Exhibition* and general admission.

Generously Supported by: **EQT**



# Live Demonstration Shows

Nothing makes science come alive like seeing it happen in front of your eyes! From explosive reactions, to the chemistry of cooking, to the basics of biology, a live program offers the kind of science experience you can't get anywhere else!

Shows are available for group bookings Monday through Friday. Add a show to your group admission for just \$2 per person. Group rates are available for 15 or more people with at least two weeks' advance reservation. Talk with us about which shows are available on your selected date. Register early for best selection.

## Shows that Bring Science to Life!

Live demonstration theater shows are 25–35 minutes long and can be booked for visits Monday–Friday. We delight and inspire visitors of all ages. See an interactive program in one of the Science Center's three demonstration theaters:

### Science Stage (1st Floor)

Smash, bash, and crash a program on the Science Stage to conduct a symphony, investigate the laws of motion, or launch a rocket.

### BodyStage (3rd Floor)

*Presented by Allegheny Health Network*

Do you know what's going on inside your guts? Have you ever wondered why we have different tastes in food? At the BodyStage, see shows about nutrition, food science, the systems of the body, and medical technology.

### Works Theater (4th Floor)

*Powered by Eaton*

Experience explosive and hair-raising demonstrations in the Works Theater. Taste a frozen marshmallow, or see the glow of molten metal. Our Tesla coil is a must-see attraction, offering a 1-million-volt display of light and sound.

## Available Programs:

### PRE-K AND KINDERGARTEN

#### Zoo Plus Two

**CONTENT THEMES:** EARLY LEARNERS, MATHEMATICS  
Capacity: 50 people

We're building a zoo! Help our "zookeeper" count, identify, and feed our animals. Learn shapes as we build the animals homes, and sing as our zoo comes to life!

### PRE-K AND KINDERGARTEN

#### Taste the Rainbow

**CONTENT THEMES:** EARLY LEARNERS, HEALTH AND NUTRITION, BOTANY, ENVIRONMENT  
Capacity: 30 people  
Food: Kale Chips (Gluten and Dairy Free)

Join us in an adventure full of colorful fruits and vegetables as we explore how families can make healthy food options a part of their daily routine. Early learners will participate in cleaning, classification by color, and identifying edible parts of vegetables and fruits.

### PRE-K AND KINDERGARTEN

#### Move It, Move It!

**CONTENT THEMES:** EARLY LEARNERS, HEALTH AND PHYSICAL EDUCATION, BIOLOGY  
Capacity: 30 people

Jump out of your seat; touch your feet! Explore how physical activity can help your body do great things!

### PRE-K AND KINDERGARTEN

#### NEW! ABC's of Chemistry (Opens Jan. 2019)

**CONTENT THEMES:** EARLY LEARNERS, CHEMISTRY  
Capacity: 30 people

Chemistry is everywhere! Little scientists will experience an introduction to chemistry with hands-on experiments that encourage exploration of the world around them!

### GRADES 1–6

#### Freeze!

**CONTENT THEME:** PHYSICAL SCIENCE

Capacity: 75 people

Learn the states of matter and see the chilling effects of super-cold liquid nitrogen. This ever-popular set of experiments demonstrates just how “cool” solids, liquids, and gases can be!

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### GRADES 1–6

#### Wheel of Science

**CONTENT THEMES:** PHYSICAL SCIENCE, CHEMISTRY

Capacity: 300 people

Come on down! You’re the next contestant on “Wheel of Science,” our fabulous science game show. Spin the wheel to see what science demonstrations will wow you today.

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### GRADES 3–5

#### Sounds Like Science

**CONTENT THEMES:** BIOLOGY, HEALTH AND NUTRITION, PHYSICAL SCIENCE

Capacity: 80 people

Can you hear that? It Sounds Like Science. Learn the anatomy and science of how we hear the world around us. That’s music to our ears!

Sponsored by:  **Allegheny**  
Health Network

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### GRADES 4–8

#### The Energy Show!

**CONTENT THEMES:** PHYSICAL SCIENCE, NATURAL SCIENCE

Capacity: 150 people

Learn how energy is harnessed to power our civilization! Explore renewable and non-renewable alternatives, while learning about technologies and careers needed to sustain energy consumption.

### GRADES 4–8

#### Brain Power

**CONTENT THEMES:** BIOLOGY, HEALTH AND NUTRITION

Capacity: 80 people

Unravel the mystery of our ever-changing brain. Challenge your brain to different types of stimuli. Trigger the impulses of neurons and receptors as we explore the main processor of our body.

Sponsored by:  **Allegheny**  
Health Network

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### GRADES 4–8

#### It’s Alimentary, Watson

**CONTENT THEMES:** HEALTH AND NUTRITION, PHYSICAL EDUCATION, BIOLOGY

Capacity: 80 people

Solve the mystery of what happens to food as it journeys through the human body through the alimentary canal (gastrointestinal tract). Students will understand how food is converted into energy and used by all parts of the body’s systems.

Sponsored by:  **Allegheny**  
Health Network

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### GRADES 5–8

#### Say Cheese!

**CONTENT THEMES:** CHEMISTRY, HEALTH AND NUTRITION

Capacity: 80 people

Food: Mozzarella Cheese (Gluten Free; Contains Dairy)

Learn the history of cheese from the cow to our table. Cheese is a wonderful teaching tool for children, combining chemical reactions and practical results! At the end, students sample our stretched mozzarella cheese. It’s whey cool!



### GRADES 5–8

#### Reactions in Action

**CONTENT THEME:** CHEMISTRY

Capacity: 150 people

Our chemistry show is full of elements that surprise! Learn about our “atoms family” with color-changing experiments and how green chemistry is helping chemists reduce, reuse, and recycle. See reactions in action!

*Program made possible with support from the Society for Analytical Chemists of Pittsburgh and the Spectroscopy Society of Pittsburgh*

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### GRADES 5–8

#### On Fire!

**CONTENT THEMES:** CHEMISTRY, ENERGY

Capacity: 75 people

Discover the science behind fire while understanding the powerful combination of heat, oxygen, and fuel. Explosive demonstrations bring to life the science of forest fires, rockets, and fireworks.

*Program made possible with support from the Society for Analytical Chemists of Pittsburgh and the Spectroscopy Society of Pittsburgh*

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### GRADES 7–12

#### High Voltage

**CONTENT THEMES:** PHYSICAL SCIENCE AND TECHNOLOGY

Capacity: 150 people

This electrifying show features our Tesla coil and its 1-million-volt display of light and sound. The presentation includes static charging equipment, magnets, and other concepts of electrical charge.

Sponsored by:  **DLC**  
—DUQUESNE LIGHT CO.—

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### GRADES 7–12

#### Physics Smash Lab

**CONTENT THEME:** PHYSICAL SCIENCE

Capacity: 300 people

Take physics to the limit! Investigate forces and motion as we smash it, bash it, and crash it.

# Buhl Planetarium Shows

This high-definition, full-dome experience will take you to the far reaches of the galaxy. Explore the mysteries of the universe, and learn how to locate planets and constellations from your own backyard.

Shows are available for group bookings Monday through Friday. Add a show to your group admission for just \$2 per person. Group rates are available for 15 or more people with at least two weeks advance reservation. Talk with us about which shows are available on your selected date. Register early for best selection.

Shows are 25-35 minutes long and can be booked for visits Monday through Friday. Take your students on a tour of the universe. See the far reaches of the solar system or gaze at the stars over Pittsburgh!

## Available Programs:

### PRE-K–GRADE 2

#### **One World, One Sky: Big Bird's Adventure**

**CONTENT THEMES:** ASTRONOMY, SPACE EXPLORATION

Based on the popular children's show Sesame Street®, this cross-cultural planetarium show provides an introduction to astronomy as Elmo and his friend, Hu Hu Zhu, from the Chinese production of Sesame Street, go on an exciting adventure to discover the Sun, Moon, and stars. This show is geared especially for the littlest astronauts.

Made possible by  PNC  
FOUNDATION

### GRADES 1–4

#### **Expedition: Solar System**

**CONTENT THEMES:** SOLAR SYSTEM, PLANETARY SCIENCE, ROBOTICS

Join Quasi, your loveable robot sidekick, on a theatrical adventure through the solar system! Travel to the International Space Station, the canyons and mountains of Mars, the rings of Saturn, and even the heart of Pluto! Meet the fleet of NASA robots expanding our knowledge!

### GRADES 3–8

#### **Astronaut**

**CONTENT THEMES:** SPACE, GRAVITY, HUMAN BODY SYSTEMS, TECHNOLOGICAL DESIGNS

Find out what it takes to become an astronaut. Explore the amazing worlds of inner and outer space, experience a rocket launch from inside an astronaut's body, and discover the perils that lurk in space.

### GRADES 4–8

#### **Mars Madness**

**CONTENT THEMES:** HISTORY OF SCIENCE, ASTROBIOLOGY, PLANETARY SCIENCE

Join in the fun with Foley effects to recreate the chilling Halloween broadcast of "The War of the Worlds!" Join the search for Martian life, in fact and fiction. Discover how robots are teaching us about the Red Planet and paving the way for Earthlings to "invade" Mars in the future!

### GRADES 4–8

#### **Cosmic Collisions**

**CONTENT THEMES:** TIME, SPACE, GRAVITY, SOLAR SYSTEM, STARS AND GALAXIES

Cosmic collisions have created many things we take for granted: the glowing Moon, the Sun's warmth, our changing seasons, and the ocean's rolling waves. They ended the age of the dinosaurs and changed the very map of the cosmos. Learn how these catastrophic and constructive events shaped our world.

### GRADES 3–12

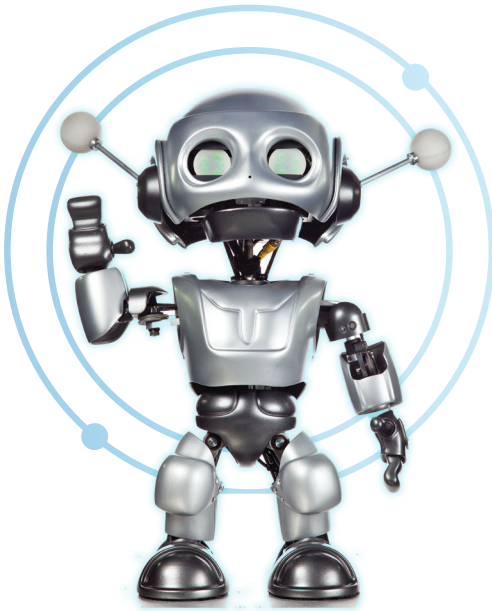
#### **Stars over Pittsburgh**

**CONTENT THEMES:** CELESTIAL PATTERNS, SOLAR SYSTEM, STARS AND GALAXIES, REGIONAL SCIENCE

Take a guided tour through the current night sky in this live presentation. Students will learn how to locate the planets and constellations in their own backyard, as well as the phases of the Moon.

Presented by: 





#### GRADES 3–12

##### Beginner's Guide to the Universe

CONTENT THEMES: SOLAR SYSTEM, STARS AND GALAXIES

Go on a tour of the universe without leaving Pittsburgh! A live presenter will be your guide as you travel beyond our own Milky Way Galaxy to the farthest reaches of our cosmos.

#### GRADES 4–12

##### SolarQuest

CONTENT THEMES: SOLAR SCIENCE, SATELLITES, SPACE WEATHER

Journey to our neighborhood star, the Sun! Explore space weather and the Sun-Earth environment. Learn how solar physicists use the Solar Dynamics Observatory to help predict solar storms. This experience is two shows in one! After the 10-minute narrated journey to the Sun, take a 20-minute tour of stars in the current night sky, guided by a planetarium educator.

##### Go Green Planetarium

In addition to stunning new laser light capabilities, the new laser projection system also is “green”—it does not require flowing water to be cooled.

The Science Center saves approximately 300,000 gallons of water per year and more than 30,000 kilowatt-hours of electricity—representing about 500,000 lbs. of carbon dioxide emissions with this system.

## Laser Shows

Take your music studies to new level or make this a fun way to celebrate the day! Be dazzled with brilliant colors and rockin’ music at the Buhl Planetarium each day when our laserists choreograph sight-n-sound spectacles of full-dome proportions to your favorite music!

Take in the technology of our new projection system featuring three high-powered, solid-state, laser projectors that deliver on-dome visuals and 3D atmospheric effects. Each laser appears many, many times brighter than the old argon gas system. These projectors are built exclusively by Laser Fantasy International, a Seattle-based company.

### Laser Pink Floyd

A Buhl Planetarium classic! Our Laser Pink Floyd offerings include a mix of Pink Floyd albums with songs from “Dark Side of the Moon,” “The Wall,” and more. Laser liquid skies and full-dome digital imagery will have you immersed in a Floyd experience like you’ve never had before! **Please Note:** Songs contain adult language and themes.

### Laser Michael Jackson

Love Michael Jackson? “Don’t stop till you get enough”—with our newest, family-friendly Michael Jackson laser show. Filled with vibrant laser colors and the late singer’s greatest hits, the King of Pop comes alive once more with “ABC,” “Beat It,” “Billie Jean,” and more.

### Galactic Odyssey!

Take a musical journey of laser light! Blast off to your favorite interstellar tunes as we fly through space at the speed of light.

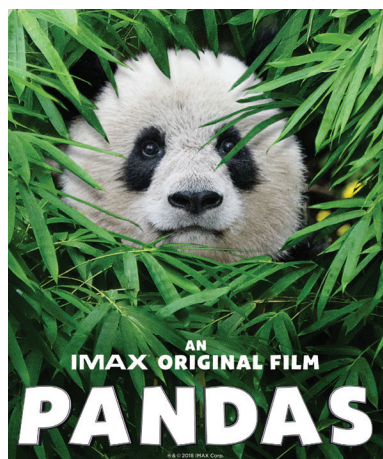
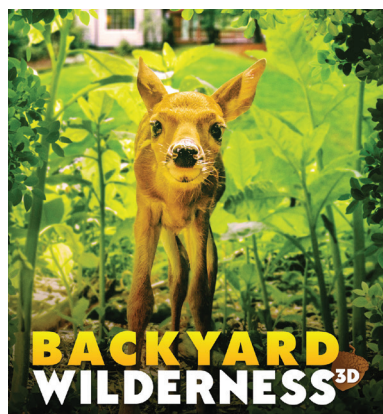


# THE RANGOS

## GIANT CINEMA

### Carnegie Science Center

To book an educational movie,  
call 412.237.3400.



## Movie Moments

Engage your students in a **BIGGER, BOLDER, AND BETTER** cinematic experience that they'll never forget!

The Rangos Giant Cinema offers fascinating documentaries in 3D to engage your students in fun-filled learning. New this school year, *Backyard Wilderness* showcases the wonders of nature where we live, and *America's Musical Journey* takes students on a cross-country adventure through our country's musical heritage.

### *Backyard Wilderness*

**KEY SUBJECTS:** BIODIVERSITY, ENVIRONMENT, ECOSYSTEMS, FOOD WEBS, WILDLIFE, SUBURBAN HABITAT, LIFE CYCLES

*Backyard Wilderness* will surprise and entertain students with the unexpected wonders of nature that are right under our noses—in our own backyards. Spanning a seasonal year around a suburban home, the film displays a stunning array of unique wildlife images and behavior—all captured by cameras mounted inside dens and nests, and moving along the forest floor and pond bottom—to reveal its inhabitants in rare and breathtaking intimacy.

Suggested for viewers age 8 and older because of life-cycle imagery

### *America's Musical Journey*

**KEY SUBJECTS:** MUSIC, MUSIC AND CULTURAL HISTORY, DANCE, ARTS, CULTURAL MIGRATION, CULTURAL DIVERSITY

*America's Musical Journey* follows singer/songwriter Aloe Blacc as he traces the roots of American music and explores the great musical cities—New Orleans, Chicago, Nashville, Miami, New York City and more—where electrifying art forms such as jazz, the blues, country, soul, and rock 'n' roll were born.

See this film in French or Spanish during Discover Languages Month in February or during January, March or April.

### *Pandas*

**KEY SUBJECTS:** PANDAS, BLACK BEARS, WILDLIFE REHABILITATION, ANIMAL BEHAVIORAL SCIENCE, HABITAT LOSS, BIODIVERSITY, ENVIRONMENT

*Pandas* is a breathtaking documentary adventure about an effort to introduce giant panda cubs born in captivity into the wild in China. The film follows a Chengdu Panda Base researcher whose passion for the species leads her to initiate a new technique inspired by a black bear program in rural New Hampshire. What starts as a cross-cultural collaboration becomes a life-changing journey for an American biologist, a scientist from Inner Mongolia, and a very curious female cub named Qian Qian.

Presented by:



## Other titles available:

For more information, including trailers, Educator Guides, and more, please visit [CarnegieScienceCenter.org/Rangos](http://CarnegieScienceCenter.org/Rangos).

*Amazon Adventure 3D*

*Animalopolis (Early Learner)*

*Asteroid: Mission Impact 3D*

*Dream Big 3D*

*Extreme Weather 3D*

*Humpback Whales 3D*

*Jerusalem 3D*

*Mysteries of the Unseen World 3D*

*National Parks Adventure 3D*

*Tiny Giants 3D*

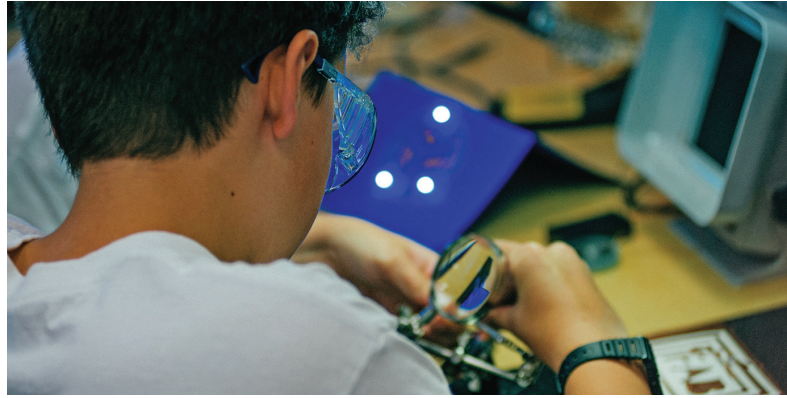


# Makerspace Field Trips

Fab Lab Carnegie Science Center field trips deliver dynamic, hands-on making experiences for school groups.

## Turn “BITS” into physical “ITS!”

Fab Lab field trips are available most Mondays and Wednesdays with some exceptions. Call 412.237.3400 to check availability, ask questions, and book. Field trips must be booked three weeks in advance. Groups can choose between a project workshop or an engineering challenge.



## Project Workshop

Capacity: Up to 15 students, plus two chaperones  
Cost: \$270

In this 90-minute workshop, each student will design and create a project using the digital fabrication technologies available in Fab Lab (machines can include laser cutters, vinyl cutters, 3D printers, or the CNC mill). Fab Lab education facilitators will lead the group through digital design using 2D or 3D design software, and then students will learn how the computer-controlled machine works while fabricating their unique projects. Project workshops can be designed for students in grades 3–12.



## Engineering Challenge

Capacity: Up to 30 students, plus four chaperones  
Cost: \$270

During this 90-minute engineering challenge, students will work in teams to design, prototype, and test their projects. Challenges are designed to use basic making materials as well as digital fabrication machines (such as the laser cutter, vinyl cutter, or 3D printer), so that teams are introduced to the software and hardware capabilities of the Fab Lab. Engineering challenges can be designed and modified for students in grades 5–12.





# STEM Field Trips

Carnegie Science Center is an essential part of the STEM education ecosystem, supporting classroom learning with hands-on, inquiry-based exploration designed to spark career awareness.

## We're Your Partner for STEM Education

We provide engaging, content-rich experiences that speak to the natural curiosity in young people. Our programs support what you're teaching in the classroom. Tailored to content themes, these STEM programs address national and Pennsylvania academic standards to support your educational goals.

All programs of Carnegie Science Center's Duquesne Light Co. Center for STEM Education and Career Development focus on STEM topics, career awareness, and innovation, with featured STEM themes.

**See if your school qualifies for scholarship funding and/or register for a field trip:**

Call 412.237.3400.

## STEM field trip funding

Through a generous grant by the Cindy and Murry Gerber Foundation, schools serving middle and high school students might qualify for free admission to an array of STEM-focused educational events including SciTech Days, Engineer the Future, and ChemFest.

## Registration Dates

Please see event descriptions on page 15 for more information.

- ChemFest (Oct. 26–27) – **Register by Friday, Oct. 12.**
- SciTech Days (Nov. 6–9) – **Register by Tuesday, Oct. 23.**
- Week of Code (Dec. 3–6) – **Register by Friday, Nov. 16.**
- Engineer the Future (Feb. 21–23) – **Register by Wednesday, Feb. 6.**
- SciTech Days (March 5–8) – **Register by Tuesday, Feb. 19.**





## NEW THEME!

### ChemFest – National Chemistry Week

Friday–Saturday, Oct. 26–27, 2018

[Register by Friday, Oct. 12](#)

To celebrate National Chemistry Week, Carnegie Science Center invites students to ChemFest, where they can explore careers in chemistry through interactive demonstrations, hands-on activities, and exciting presentations. This year's theme is "Chemistry is Out of This World," so expect opportunities for learning about chemistry of and in outer space!

Presented by:  Ashland<sup>™</sup>  
always solving

Sponsored by:



In partnership with: American Chemical Society

## NEW PROGRAM! Week of Code – Computer Science Education Week

Monday–Thursday, Dec. 3–6, 2018

[Register by Friday, Nov. 16](#)

First- through fifth-graders can celebrate Computer Science Education Week at Carnegie Science Center in this new program! They will see a new interactive theater show about coding, logic, and problem solving, and explore programming robots in roboworld®.

They also will experience hands-on coding for smaller robots such as Sphero™, Bee-Bot®, and Cozmo®.

## NEW WORKSHOPS! SciTech Days

Tuesday–Friday, Nov. 6–9, 2018; March 5–8, 2019

[Fall registration closes Tuesday, Oct. 23.](#)

[Spring registration closes Tuesday, Feb. 19, 2019](#)

Serving 6,000-7,000 middle and high school students and teachers annually, SciTech Days connect students to real-world scientists and engineers from more than 40 companies and universities through a wide range of hands-on experiences, including exhibits, workshops, and stage shows.

New programs this year include "Hazelwood Green and Pittsburgh's Green Story: Pittsburgh's Leadership in Green Innovation," Cyberpatriot: Science and Cybersecurity," and "Ecosystems, Toxins, and Your Health."

Premiere Sponsor:  FedEx<sup>®</sup>

Major Sponsors:  

## Engineer the Future – National Engineers Week

Thursday–Saturday, Feb. 21–23, 2019

[Register by Wednesday, Feb. 6, 2019](#)

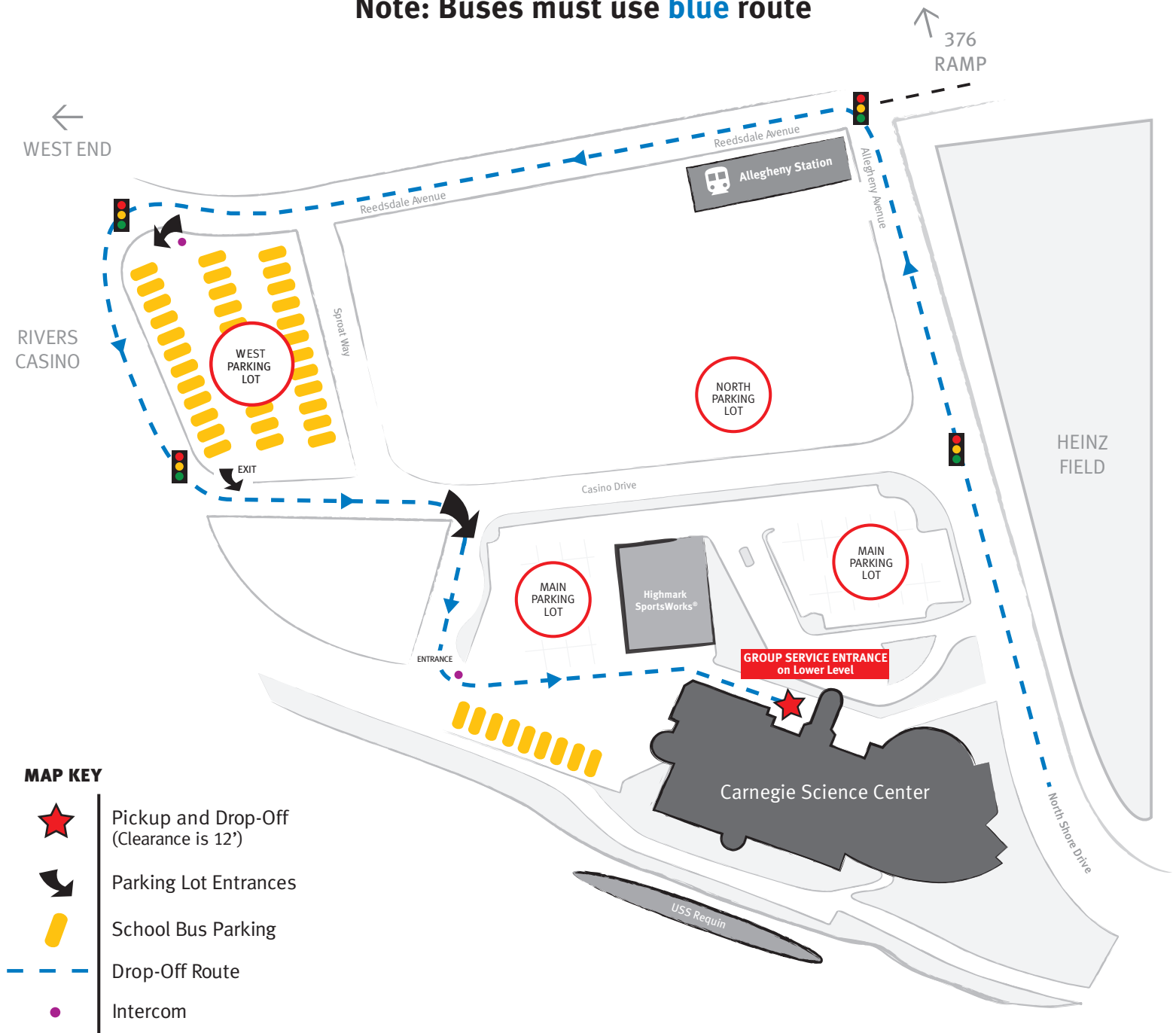
In celebration of National Engineers Week, Engineer the Future explores the range of engineering opportunities by engaging students in hands-on activities, interactions with professionals, and presentations at more than 50 event tables.

Powered by: 

*These field trips are programs of the **Duquesne Light Co. Center for STEM Education and Career Development.***

# Group/Field Trip Pickup and Drop-Off Route

Note: Buses must use **blue** route



**PLEASE NOTE:** All BUS drop-off/pickup is at the **GROUP SERVICES ENTRANCE** on the lower level ground floor (below the Main Entrance ramp).



