

2019-2020

SCIENCE on the **ROAD**

We bring
science/maker
education
to you!

and

MOBILE FAB LAB

PRESCHOOL TO GRADE 12



CARNEGIE
SCIENCE
CENTER

Book a science/maker EDUCATION EVENT

We are eager to help you plan an exciting and unforgettable Science on the Road or Mobile Fab Lab experience!

REVIEW OUR PROGRAMS, AND FOLLOW THESE STEPS:

1. Collect

- Date(s) and time(s) for the program
- Contact and payment information
- Program location
- Group grade level(s) and number of attendees
- Selected programs
- Any special needs

2. Contact

- For Science on the Road, please call 412.237.3400. One of our staff members will answer any questions you have and schedule your programs.
- For BNY Mellon Mobile Fab Lab, please email CustomerService@CarnegieScienceCenter.org. One of our staff members will respond to answer questions and schedule your experience.

3. Get Ready

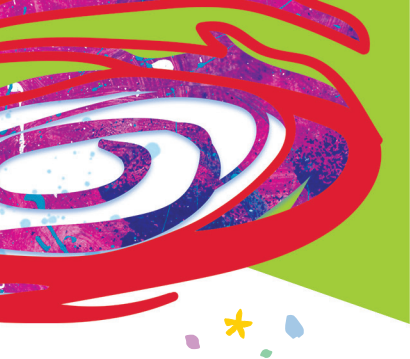
An educator will arrive at your location at the appropriate time to set up and present your program(s). All you need to do is provide the students!

Shop'n Save® S.E.E.D. Program

Concerned about affording a program?

The Shop'n Save® S.E.E.D. program will bring any Science on the Road program listed with the icon above to your school at no cost to you. Shop'n Save now has made it even easier to earn your S.E.E.D assemblies. Simply go online and designate your school to receive the points you earn when you shop! No more collecting paper receipts!

1. Get a Shop'n Save Perks Card, and register it at www.shopsnsavefood.com/community/seed-program. Part of the registration process is to designate a school. Ask your parents and teachers to do the same.
2. Swipe your Perks Card each time you shop at Shop'n Save. Purchases automatically will be added to the linked school's total, which contributes to the goal of \$250 per student required to earn educational S.E.E.D assemblies.
3. When you have accumulated enough points, book your assembly! To book, complete your S.E.E.D form and call 412.237.3400 to complete registration.



We want students to relate in-school studies to potential careers in STEM – science, technology, engineering, and math.

LET US BRING SCIENCE TO YOU:

Educators have a lot to do. We understand it can be difficult to fit a field trip into your busy classroom schedule. That's why we've developed a wide array of cost-effective programs that require no legwork, little planning, and absolutely no school buses!

Science on the Road brings high-energy science programs and hands-on activities to your site for students in Pre-K and through high school!

BNY Mellon Mobile Fab Lab brings maker education, including digital fabrication, to your site for elementary, middle, and high school students.

- Every program is carefully tailored to the appropriate grade level and is aligned with national and Pennsylvania academic standards and assessment anchors to help support your educational goals.
- Our goal is sparking a passion for science and technology in every student and providing convenient, superior science and maker education opportunities to schools!

For full offering lists, visit:
CarnegieScienceCenter.org/SOR
CarnegieScienceCenter.org/MobileFabLab

FAQS:

How far will the Science Center travel?

Anywhere! We've been across Pennsylvania and as far away as Arizona, Nevada, and even California!

Is there a travel charge?

There is no travel charge for programs located within 24 miles of Carnegie Science Center or those located within Allegheny County. Other locations have a travel charge that is calculated by mileage. Sites that are far away from Pittsburgh may incur an overnight charge.

What kind of space do you require?

We offer a wide variety of programs scaled from classroom-size activities to auditorium assemblies. If your school does not have room for our Mobile Fab Lab equipment, students can use the equipment in our vehicle. Contact us to discuss the possibilities.

I'm not sure what's going to fit my needs. Can you help me decide?

- **Science on the Road:** Call 412.237.3400 to talk to a reservations specialist.
- **Mobile Fab Lab:** Email CustomerService@CarnegieScienceCenter.org to initiate contact with our Mobile Fab Lab staff.
- Our team will help guide you to the program that fits your time, educational needs, and budget.

ASSEMBLY PROGRAMS

*Looking for a way to enhance your students' learning?
Want to excite your students about science?*

Our **assembly programs** are loaded with science content, packed into an amazing large-scale production. Programs are available for preschool, elementary, and middle school students. You provide the space, and we bring the science to you!

DYNAMIC 45-MINUTE PROGRAMS

Recommended capacity of 250 students per presentation. **We tailor each show to the audience's learning level**, so we recommend no more than three consecutive grade levels at each presentation.

- **FEE:** \$475 for the first program; \$225 for any repeat programs

Who Wants to Be an Engineer: Imagine it. Make it. Make it Better!

CONTENT THEMES: Engineering and Iteration, Digital Design and Fabrication, Forces and Interaction, Materials Science

GRADES K-8 Engineers are hard at work making life better. Now it's your turn to be the engineer in this high-energy game show experience. Ramp up for "Double Dare"—inspired physical engineering challenges. Tinker with simple machines to build soaring towers and suspension bridges.



Produced in partnership with

Chem-Mystery Files: Trial by Fire

CONTENT THEMES: Properties of Matter, Energy, Chemical Reactions

GRADES K-8 Join Detective Sam Silica on the hunt for clues in a burning mystery, and see how evidence "reacts" to scientific tests. Live demonstrations highlight phases of matter, physical and chemical change, properties of elements, and combustion. Help Silica analyze the results to successfully close another case in the Chem-Mystery Files.

FOR BEST VALUE ADD A HANDS-ON EXPERIENCE!

GREAT FOR GRADES 1-8!

For \$900, receive two assembly programs (total of 480 students), and participate in **45 minutes of adventure stations**, filled with eligible content themed with the show.

Science Takes Flight: From Blueprints to Blue Skies

CONTENT THEMES: Physics, Materials Science, Engineering, Regional Science

GRADES K-8 Your future is cleared for takeoff! Learn how innovative aircraft fly off the drawing board and into the sky. Take a spin on our hovercraft, and feel the fiery roar of propulsion chemistry.

Produced in partnership with



Journey Through the Human Body: An Anatomy Adventure

CONTENT THEMES: Anatomy and Physiology, Medical Technology, Health and Fitness

GRADES K-8 Take a fantastic voyage through the bloodstream to learn about human body systems. Discover innovations in medicine, from cryogenics to lasers!

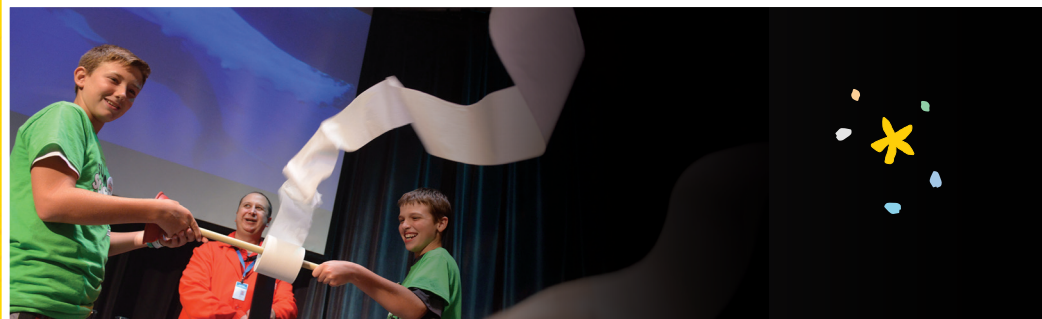
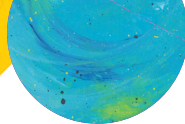
Produced in partnership with



Allegheny
Health Network

SEE HIGHLIGHTS FROM OUR ASSEMBLIES!

Visit CarnegieScienceCenter.org/SOR to view the video!



Grand Slam Science

CONTENT THEMES: Physics, Biology, Materials Science, Mathematics

GRADES K-8 Batter up! Discover the science behind America's favorite pastime as you find a bat's "sweet spot," measure reaction time, predict a ball's trajectory, and then slide into home for a fireworks finish that's sure to be a blast! *Special thanks to the Pittsburgh Pirates.* 🌿

This show was developed in partnership with



Wild by Design: Innovations from A to Zoo

CONTENT THEMES: Zoology, Physics, Engineering, Regional Science

GRADES K-8 Engineering is a day at the zoo! Join local scientists and on-screen zoo animals for a bio-inspired adventure with leaf blowers, foamy chemistry, and liquid-nitrogen rockets! 🌿

Produced in partnership with



Special thanks to Pittsburgh Zoo & PPG Aquarium

SolarQuest: Living with Our Star

CONTENT THEMES: Astronomy, Physics, Technology, Environmental Science

GRADES K-8 Embark on a quest to learn about the Sun. See yourself in infrared, explore photosynthesis with balloon-popping lasers, and watch as exploding hydrogen and fire tornadoes take you to the surface of the Sun! 🌿

Produced in partnership with



It's Electric!

CONTENT THEMES: Physics, Engineering, History of Science

GRADES K-8 Learn about the revolutionary science of "Grounding Father" Ben Franklin, get charged up for a hair-raising experience with our Van de Graaff generator, then come on stage for a "shocking" finale! *Adventure stations not available.* 🌿

Sponsored by



STEM-BY-THE-HOUR PROGRAMS

Students love fun, hands-on activities!

Educators love minds-on learning loaded with science content! **STEM-by-the-Hour** allows you to expand on and generate enthusiasm for important themes in your curriculum right in the classroom.



45-MINUTE OR 1-HOUR CLASS PERIOD

- **FEE:** \$125 for each program; travel fees might apply
- **Capacity:** 30 maximum
- Single programs available June-March. Two-program minimum in April-May.
- Customized for your grade level

Chemistry

Chemical Concoctions

CONTENT THEMES: Chemistry, States of Matter, Structure and Properties

GRADES K-3 Stir up some concoctions such as bouncy putty and chalk to take home.

Chemistry in a Bag

CONTENT THEMES: Chemistry, States of Matter, Structure and Properties, Energy

GRADES 3-5 Conduct experiments that produce exciting temperature-changing results.



Glow in the Dark

CONTENT THEMES: Chemistry, Physical Science, Waves of Energy

GRADES 3-5 Explore how color and light interact when experimenting under black light with everyday objects.

Trouble in Fruitvale

CONTENT THEMES: Ecology, Environmental Science, Human Impacts, Chemistry

GRADES 3-6 What happened to the water in Fruitvale?! Learn about fresh water sources, possible contaminants, and protective measures you can take while conducting a water-quality assessment.



Engineering

Junior Scientist-Engineer

CONTENT THEMES: Engineering, Motion and Energy, Experimentation

GRADES K–5 Can your tower stand up to an earthquake? What type of bridge should you build and why? Design, build, predict, test, observe, and assess ways to improve your team's structures.

Build It-Break It

CONTENT THEMES: Engineering, Forces, Experimentation, Forces and Interactions

GRADES K–5 Build unique structures. Experiment with the forces helping to keep them up and take them down.

Engineering Challenge

CONTENT THEMES: Engineering, Careers in Science, Forces and Interactions

GRADES 4–6 Experience what it's like to be part of a design team. Tackle different engineering challenges to stay under budget and on time.

Astronomy

Space as Home Base

CONTENT THEMES: Astronomy, Physics, Forces and Interactions

GRADES K–2 Explore space, gravity, and distance between objects in space.

Rockets

CONTENT THEMES: Astronomy, Space Systems, Physics, Chemistry

GRADES K–5 Reach for the stars by shooting off stomp rockets and Alka-Seltzer rockets, and hit your target every time.

Spacewalking: Do You Have What It Takes?

CONTENT THEMES: Astronomy, Physics, Human Endeavors

GRADES 3–5 Step into an astronaut's shoes. Experience the effects of extreme heat and pressure while living and working in space.

Biology

Who Are You?

CONTENT THEMES: Genetics, Heredity, Adaptation

GRADES 4–6 Explore your genetic makeup through the observation of displayed traits. Find out how certain traits help plants and animals survive and thrive. "Roll the dice" to see how one's outward appearance can result from millions of possible genotype combinations.

Making Sense of Sound, Level 1

CONTENT THEMES: Interactions of Body Systems, Concepts of Health, Physics

GRADES K–3 Test the limits of sound energy and safety while exploring how we can hear what we hear. Produce and prevent sound travel in a variety of ways.

Making Sense of Sound, Level 2

CONTENT THEMES: Interactions of Body Systems, Concepts of Health, Physics

GRADES 4–6 Play with sound production and modulation. Test the limits of human hearing while exploring the science of sound safety.

Sounds of Silence

CONTENT THEMES: Waves of Energy, Biomimetic Technology

GRADES 4–6 Experience the power of sound waves through focused listening. Use sound to navigate both a space and outer space.

NEW! Roots, Shoots, and SoluteS

CONTENT THEMES: Relationships in an Ecosystem, Effects of Population Dynamics, Significance of Biodiversity

GRADES 6–8 Get your hands dirty as we explore the physiology of trees.

Ask about our accessibility options:

Including a program designed for audiences of all physical and intellectual abilities.

PORTABLE PLANETARIUM

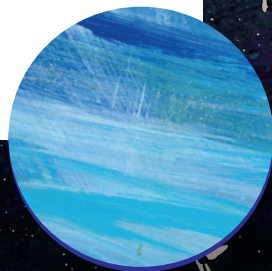


Discover how powerful software and an HD projector make Science on the Road's portable, inflatable dome more immersive for your learners than ever before.

- Experience the extreme weather and geological features of our solar system's many planets and moons; then rocket beyond the Sun to witness wonders of the universe such as nebulae and black holes.
- Watch for familiar celestial bodies as we shift from day to night skies and highlight objects your students can see from their own backyards!

45-MINUTE PROGRAM

- **Capacity:** 30 students
- **FEE:** \$240 includes setup and two presentations (shows can be different); \$120 for each additional presentation
- **Requirements:** Indoors only—12' ceiling height, 20' x 20' floor space, and electrical access
- Customized for your grade level



Bring the stars to your next special event!

Transport your guests to the starry heavens without ever leaving your venue. Our portable planetarium makes weddings, proms, graduations, and parties even more memorable. Guests can drift into and out of our star shows for as long as they like, and we'll even customize the shows to your interests.

FEE: \$240/2 hours, Travel fees might apply

One World, One Sky: Big Bird's Adventure

PRE-K-2 Elmo and his friend, Hu Hu Zhu, a Muppet from the Chinese co-production of Sesame Street®, go on an exciting trip to discover the Sun, Moon, and stars. To close the show, Big Bird, Elmo, and Hu Hu Zhu pick a friendship star to celebrate the idea that even though they live in two different countries, they still share the same sky.

Made possible by  **PNC**
FOUNDATION

Moving Right Along

GRADES K-2 Explore how Earth's movement affects what we see in the sky. Travel through time as you observe how the sky changes day to day and month to month as the Earth completes its orbit around the sun.

What's Up

GRADES K-2 Uncover the mysteries of objects in our sky, and learn how to spot planets, stars, and our moon. Take a tour of the night sky above your hometown. Find out what's happening in tonight's sky so you can go home and explore yourself!

Planets

GRADES 2-6 Go planet hunting in the night's sky and learn how ancient astronomers differentiated between planets and stars. Then, take a revealing tour of the objects that make up our solar system.

Moons of the Solar System

GRADES 3-6 Travel to a few of our solar system's 180+ known moons, and learn the ways they differ from planets. Visit some of the most exotic and dangerous places in our solar system, from volcanoes to icy deep oceans to places where life could be hiding just beyond our reach!

Solstice and Equinox

GRADES 6-8 Learn how the changing position of our Sun affects the sky we see from day to day and month to month. Explore how the solstices and equinoxes relate to the changing seasons on Earth.

World in Motion

GRADES 6-8 The sky's the limit as you explore how gravity gives rise to motion and how we predict celestial movements from day to day and year to year. Study the relationship between Earth's movement and how it affects what we see in space.

The Sun

GRADES 7 AND UP Discover the energy source of our great star while exploring its age and structure. See how space weather affects planet Earth and how a solar eclipse can turn day into night.

Hubble Space Telescope

GRADES 7 AND UP See the stars up close with the Hubble Space Telescope! Explore Hubble's history and its most useful features. Take a tour through Hubble's landmark discoveries, including a look at some of the most distant objects in the universe.

Jupiter and the Galilean Moons

GRADES 7-12 Tour Jupiter and its four largest moons! You'll start on Earth by examining Galileo's contributions to astronomy. Then, take flight to the Jovian system to explore past, present, and future missions to Jupiter and its moons.





BNY Mellon MOBILE FAB LAB

Using 3D printers, laser and vinyl cutters, a Shop Bot, and more, this mobile makerspace gives students the opportunity to experience the STEM-based maker movement, and take their designs from computer screens to robotic machines.

Book the Mobile Fab Lab

Email CustomerService@CarnegieScienceCenter.org

Space and setup requirements: A makerspace is set up at the hosting location in a classroom-size or larger space, for the duration of the visit. If such a space is unavailable, participants may use the Mobile Fab Lab vehicle itself.

PRE-K – 12 From conception to fabrication, students learn how to turn “bits” into “its.” To help align your visit with scheduling and curriculum goals, Mobile Fab Lab programming is offered in the three different styles listed below.

CONTENT THEMES: Engineering, Design, Advanced Manufacturing, Rapid Prototyping

- 1. Project Workshops: (90-minutes+)** For up to 16 participants at a time. Students design, then fabricate a unique project. Projects can be tailored to individual curriculum needs.
- 2. Engineering Challenges: (2 hours)** For up to 30 participants at a time. Students work in teams to design, prototype, and test projects.
- 3. Flagship Programs: (Multiday)** The hosting location works with the Fab Lab Mobile Education Coordinator to create a project that has an impact beyond the classroom. Time requirements and group size will vary depending on the project.

Each Mobile Fab Lab program can be customized to your grade level.

In partnership
with:



BNY MELLON

MOBILE FAB LAB PRICING

- One-day experience – \$1,100
- Two-day experience – \$2,100
- Three-day experience – \$3,100
- Four-day experience – \$3,850
- Five-day experience – \$4,525

Longer experiences also available;
email for details. Travel fees might apply.



FOR EDUCATORS

Learn how to integrate STEM-based digital fabrication into your school's curriculum. Mobile Fab Lab professional development is available through our Teaching Excellence Academy.

Presented by:



BONUS

Book a three-day-or-more Mobile Fab Lab experience, and enjoy special teacher professional development at no additional cost!

BRING HEALTH SCIENCE to Your School!

90-MINUTE + Q-&A

- FEE:** \$225 per session (including up to 30 students); \$6 for each additional student
- Includes optional presentation:** All About HIV

Wonder of Wonders (WOW)

CONTENT THEMES: Human Body, Genetics

GRADES 5–7 Specially trained health science educators use audiovisual materials to give students important, accurate, and age-appropriate information about puberty, reproduction, the development of new life, and the facts about HIV.

This program has been used by dozens of school districts to supplement their health and science education programs.

Free Parent/Teacher Preview Opportunities

Interested teachers and parents are invited so they can be aware of how sex and reproduction will be presented to their children. Previews end with a question-and-answer session. No reservations are required.

Join us on any of the following Tuesdays:

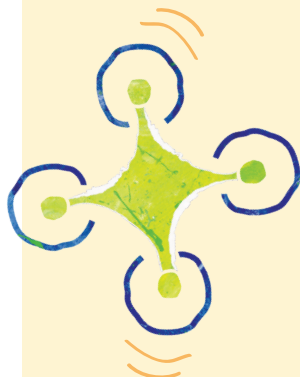
Jan. 7 | Feb. 4 | March 3 | April 7 | May 5

All previews begin at 7 pm at Carnegie Science Center. Please enter the building by the security entrance on the side of the building.

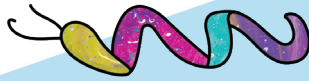
Date just for families on Tuesday, March 3, 2020

You're invited to this special event for parents who prefer to view the program with their child.

FEE: \$10 per child (cash only); FREE for adults



PRESCHOOL PROGRAMS



It's never too early to get kids excited about STEM education!

That's why our **Early Childhood STEM Center** is committed to developing high-quality education programs for children ages 3 to 5. Choose from a variety of hands-on science learning programs in a host of eligible content areas.

45-MINUTE PRESCHOOL DISCOVERY DAYS

Each program is designed to give up to **30 students** the chance to expand on science content themes with engaging hands-on activities.

- **FEE:** \$125 for each program
- Single programs available June-March
- Two-program minimum April and May



Peg + Cat

CONTENT THEMES: Math, Counting, and Comparing

Help Peg and Cat, the lovable duo from the PBS KIDS' series "PEG + CAT," solve everyday math problems and save the day!

Developed in partnership with



Fred Rogers
PRODUCTIONS

Body Builders

CONTENT THEMES: Biology, Form and Function

Explore how your amazing body works by using role-playing, teamwork, and interactive play!



Bubble Science

CONTENT THEMES: Chemistry, Properties of Matter

Explore the 'S' in STEM (science) with amazing bubbles and bubble blowers.

Just Add Water

CONTENT THEMES: Properties of Water, Bodies of Water, Force and Motion

Explore real-world concepts as you make a splash with water play!

Creepy Crawly

CONTENT THEMES: Biology, Form and Function

Investigate insect parts and behavior through song and dance, observe live insects, and make bug antennae to take home.

Hello Robo!

CONTENT THEMES: Technology, Influence of Emerging Technologies

What is a robot, and what does it do? Learn the 'T' in STEM (technology) as you interact with robots!

One World, One Sky: Big Bird's Adventure

CONTENT THEMES: Earth and Space, Origin and Evolution of the Universe. See page 9 for the description.

Made possible by  **PNC**
FOUNDATION

NEW! Over the Moon

CONTENT THEMES: Origin and Evolution of the Universe

Travel into space to learn how the Moon moves and why it looks different each night. (30-minute program)


Preschool Assembly Programs

Our **30-minute assembly programs** can accommodate up to **200 students per show**.

- **FEE:** \$375; \$175 for each repeat program


Up in the Air

CONTENT THEMES: Properties of Matter, Force and Motion, Weather and Climate

How do we know the air is there? Is anything lighter than air? Investigate these questions and be blown away by our amazing air and wind devices. 

Amazing Bugs

CONTENT THEMES: Common Characteristics of Life, Life Cycles, and Form and Function

Find out how far a grasshopper can hop, how butterflies get their wings, and more incredible insect insights! 

New STEM Program for Babies and Toddlers!

A **30-minute program** can accommodate up to **15 children per program**.

- **FEE:** \$125 for two 30-minute programs, two-program minimum



Pop It

CONTENT THEMES: Five Senses, Fine Motor Skills, Scientific Observation, Properties of Matter

Sing, dance, and participate in dramatic play to practice popping skills—from popping bubbles to pretending to pop popcorn.

Family STEAM Events

*A ready-to-go package
perfect for school carnivals
or family events.*

Up to **150 people** can enjoy multiple tabletop activities with hands-on science exploration. Families can experience STEAM (science, technology, engineering, art, math) stations that will take **45 minutes**.

- **FEE:** \$400; 10–12 volunteers required
- Event runs up to 2 hours of activity time



SCIENCE EDUCATION EVENTS

*Get students and their families
learning together!*

Make fun science part of your next big group event! Science on the Road will bring these specially designed activities to you and make your next carnival, festival, or other big event a blast!

FAMILY STEM NIGHTS

This package of 10 hands-on activities is perfect for school carnivals or all-age events. Kids or families will engage in a variety of interactive tabletop experiments that will take about 45 minutes to complete, including a project to take home!

CHOOSE FROM THESE TOPICS: Health and the Human Body, Secrets of Sun and Space, and Unsolved Chemistry.

- **Capacity:** 150
- **FEE:** \$400 for 2 hours of activity time
- **Requirements:** 12–15 volunteers to monitor tables; training will take place 30 minutes before event.

SCIENCE MAKE & TAKE

Great for festivals, carnivals, games, and other casual affairs — anytime you want unique activities to entertain crowds. Everyone who visits our activity table gets to make something to take home! Choose from a variety of science activities such as kazoos, ultraviolet-detecting rings, bubble cups, and liquid nitrogen activities.

- **Capacity:** 50-100 people per hour (based on activity selection)
- **FEE:** \$150 for the first hour; \$100 for each additional hour

SCIENCE PARTIES *and Special Events!*

It's a one-of-a-kind bash when the Science Center comes to you!

ACHIEVEMENT PARTIES

Each party gets to sample liquid nitrogen ice cream.

- **Length:** One hour of interactive demonstrations, including ice cream
- **Capacity:** 25 maximum
- **FEE:** \$225 for up to 15 children; \$10 more for each additional child

Mad Mixtures

AGES 5–7 Chemistry made happy: Children make play dough and bubble cups and experiment with tie dye.

Sweet Science

AGES 5–12 Make and create your own candy treats while learning about changing states of matter. Children make sandy candy wands, fruit snacks, and chocolate-covered graham crackers.

Science-N-Toys

AGES 8–10 Construct your own toys to discover the science behind them. Children make play dough, slime, and bouncy balls.

Science with a Sparkle

AGES 8–10 Mix up your own lip gloss, sugar scrub for the face, and sparkling body glitter. Entertain your guests with compound science.

LIQUID NITROGEN SMOOTHIE, FONDUE, OR ICE CREAM

Wow your guests with a tasty treat they won't get anywhere else. Our presenter will make and serve up your choice of smoothies, fondue, or ice cream created with a special ingredient: liquid nitrogen!

- **FEE:** \$150–\$250/hour

PORTABLE PLANETARIUM

You can bring the stars to any special event! See page 8 for details.





**NO SCHOOL
BUSES REQUIRED!**

We Bring Science and Maker Education to You!

CARNEGIE **SCIENCE CENTER**

One Allegheny Ave. | Pittsburgh, PA 15212

WITH EVERY ASSEMBLY PROGRAM — **STUDENTS RECEIVE** —

*a coupon for a FREE child admission
with a paid adult admission to
Carnegie Science Center!*

Assembly Programs
Mobile Fab Lab
Portable Planetarium
Preschool Programs

Science Education
Events
Science Parties and
Special Events
STEM-by-the-Hour

