

2012-2013

science ON THE road

SERVING PA, OH, MD, WV...and beyond!

Grades PreK-8



**CARNEGIE
SCIENCE
CENTER**

science ON THE road

2012-2013

How To Use This Book:

Just follow these simple steps. Our Science on the Road staff will help you plan an exciting and unforgettable experience—all without leaving your school!

1 Gather your information.

We will need the following information to book your program:

- Contact and billing information
- Program date(s) and time(s)
- Program location
- Group grade level and number of attendees
- Selected programs
- Special needs
- Any questions you may have

2 Call Science on the Road at 412.237.3400, then press 7.

One of our staff will take your information, answer any questions or concerns you may have, and schedule your programs. We also will explain confirmation and payment procedures.

3 That's it!

A Science Center presenter will arrive at your location at the appropriate time to set up and present your program(s). All you provide is the space, and the only things your kids need to bring are their brains and some enthusiasm!

For Those Who Prefer Info Online...

Visit CarnegieScienceCenter.org for more information about Science on the Road programs and details about how they relate to anchors and standards. Just click on the Educators tab!

Get started!

Call 412.237.3400, then press 7, for more information!

Our knowledgeable staff will help you with any questions you may have.



bring engaging science experiences to your school!

Educators are under a lot of pressure. We understand that 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 grades PreK–8.

Every program is carefully tailored to the appropriate grade level and is aligned with national and Pennsylvania academic standards and anchors to help support your educational goals.

We aspire to ignite a passion for science in every student and provide convenient, superior science education opportunities to schools! We want students to relate in-school studies to potential careers in STEM—science, technology, engineering, and math.

Science on the Road falls under the auspices of Carnegie Science Center's **Chevron Center for STEM Education and Career Development**. Launched in November 2011, the Chevron STEM Center was backed by strong financial support from **Chevron and founding partners California University of Pennsylvania, Duquesne Light, Eaton Corporation, LANXESS Corporation, NOVA Chemicals, and PPG Industries Foundation.**



science experiences

Our Best Value Science Experiences feature an assembly, plus adventure stations! Our dynamic science shows are jam-packed with spectacular science, awe-inspiring demos, and hands-on activities that students will love—and that reinforce classroom concepts!

Each participating class will experience two rounds consisting of a 1-hour assembly plus 45-minute adventure stations. Our staff will be at your site for a full day and can accommodate up to 480 students per day.

Capacity: 480 students
Fee: \$850 all inclusive

what you'll need:

Two breaks during the school day:
One hour for the assembly and 45 minutes for the adventure stations.

12-15 adult volunteers, high school students, or combination of both. (Your Science Center presenter will conduct a training workshop for volunteers 45 minutes before the first scheduled group.)

Grades 1-8



NEW! Colossal Fossil Fuels

Content themes: Geology, Energy, Paleontology, Regional Science

It's an epic energy adventure millions of years in the making! Journey through time in search of coal, oil, and natural gas. Travel to Prehistoric Park, roar with ancient animals, and discover the plants and plankton that became fossil fuels. At Geology Junction, use sound and electricity to locate underground fuel deposits. At Rock-buster Rig, extract natural gas from the region's Marcellus Shale formation.

Produced in partnership with **EQT**

Special thanks to Carnegie Museum of Natural History

Captain Green's Time Machine

Content themes: Conservation, Ecology, Climate Change

Join Captain Green on a quest to save the environment. Travel to ecosystems around the globe as you learn about the science of climate change in rain forests, oceans, and polar ice caps through demonstrations of fiery methane bubbles and colorful dry ice chemistry. Explore renewable energy technology with an ethanol fire car and a windy demonstration of lift. Take control of "Spaceship Earth" as you race against time to create a sustainable future!

Produced in partnership with **PPG**

Ion Jones and the Lost Castle of Chemistry

Content themes: Chemistry, States of Matter, Regional Science

Discover the hidden treasures of chemistry in this action-packed adventure! Team up with "Ion" Jones and real PPG scientists on a global quest to collect the elements. Unleash a Mentos Geyser in the Bubblin' Badlands, test your materials science mettle in the Dunes of Silica, and ignite the Mountain of Fire. By the time your students reach the castle, they will have observed chemistry in action—from catalysts to combustion!

Produced in partnership with **PPG**

Rockin' Robots: World Tour

Content themes: Robotics, Engineering, Technology, Regional Science

Juice your circuits, spin your gyros, and groove to the binary beat! Meet Quasi the Robot, a childlike animatronic robot who dreams of adventure, and help him design and deploy a heroic band of 'bots to help humanity! Interact with real robotic technology as you take the World Tour. By the end of the show, Quasi will have explored land, sea, and space on his journey to become a rockin' robot!

Produced in partnership with **CALU**

Special thanks to Katherine Mabis McKenna Foundation and C.W. Benedum Foundation



don't have all day? try an hour-long version of these programs!

Time required: 45-60 minutes

Grades: 1-8

Fee: \$475 includes set-up and one presentation

If you're short on time or space, try one of these as a stand-alone assembly show. Turn one of our best value science experiences into a program that works with your schedule and budget. These programs come with lots of great bells and whistles, just like our best value programs. These short assemblies will make a huge impact on your students!

Visit CarnegieScienceCenter.org for more info on requirements, guidelines, and standards.



GET A FREE SHOW!

The Shop 'n Save® SEED program will bring any program listed with this icon to your school at no cost to you. Just collect Shop 'n Save receipts! Call 412.449.0157 for more information.

assembly programs

The dynamic action in our science assembly programs includes audience participation, fun-filled demonstrations, and live experiments with creative props.

Capacity: 250 students
Time required: 45 minutes
Fee: \$375 includes set-up and one presentation;
\$175 for each repeat presentation.



NEW! Take a Hike: Backyard Biodiversity

Content Themes: Biodiversity, Technology, Regional Science

Become a field biologist on a global trek through woodlands, waterways, and even clouds! Sensors, sounds, and satellites help you track and map wildlife. Discover amazing animal adaptations on your high-tech adventure. Team up with local conservationists and learn how to be a “Habitat Hero” in your own backyard!

For grades K–6

Supported by **The Spring Program**, an initiative of **The Sprout Fund** in partnership with **The Pittsburgh Foundation**.



NEW! Tour de Force

Content themes: Physical Science, Human Endeavors

From bowling balls to Einstein’s gravity wells, experience the forces that keep you in your chairs, as well as the planets and stars in their orbits! Take part in high impact demonstrations of Newton’s Laws as Tour de Force smashes, crashes, and blasts you on a tour of universal forces and ever-changing forms of energy.

For grades 3–8

Start Your Engines

Content themes: Motion, Energy, Engineering, Technology, History of Science & Technology

Science demonstrations transport you across land, through the air, and into space! Things really heat up when we show you how a steam engine works and demonstrate combustion! Learn about automotive safety, see how transportation technologies have changed over time, and imagine what might be coming next. *(Remember “Fasten Your Seatbelts”? Same great show with a new name!)*

For grades K–6

indicates an eligible show for the Shop ‘n Save® SEED program. See page 5 for details.

Space Encounters

Content themes: Solar System, Stars & Galaxies, Space Exploration

Blast off with us into interplanetary space to experience comets, vacuums, life aboard the International Space Station, and walking on the Moon.

For grades K–6

Wild Weather Adventure

Content theme: Weather

This multi-player, life-sized board game brings the weather indoors! Explore tornadoes, air pressure, lightning, and other weather phenomena. Test your knowledge about the air around you as we pit one team against another for a highly interactive weather adventure.

For grades K–6

Home Makeover: Green Edition

Content Themes: Electricity, Energy, Conservation

Step right up for a hair-raising experience on our Van de Graaff Generator! Score points through energy-efficient choices in our interactive game show, and feel the ZAP of electricity in our literal “lightning round”!

For grades K–8

Sponsored by:  **Duquesne Light**
Our Energy...Your Power®

Fire and Ice

Content themes: Energy, States of Matter

Students learn about combustion and the fire triangle, then see what happens when objects are frozen at 320° below zero in liquid nitrogen.

For grades K–8


Sponsored by:  **NOVA Chemicals**

Light Fantastic

Content themes: Chemistry, Light

In this program, vibrant demonstrations illuminate the chemistry of light and lasers. Explore the chemistry of color in an interactive show themed to the Periodic Table of Elements.

For grades K–8

Sponsored by:  **IVI Foundation**

NEW! Dinosaur Detectives

Opens January 2013

Content themes: Biology, Human Endeavors

What did dinosaurs eat, and why? What did they sound like and look like? If they lived so long ago, how do scientists know so much about them? Investigate clues from the dinosaur fossil record to answer these questions and more as you become a dinosaur detective!

For grades K–2

Developed in partnership with **Carnegie Museum of Natural History**

NEW! Amazing Bugs

Opens January 2013

Content themes: Biology, Human Endeavors, Environmental Science, Ecosystems

Bugs are among the most diverse living things on the planet, but how much do you really know about them? Can you tell an insect from an arachnid? (Hint: count the legs!) Join us to explore the nature of these helpful, sometimes harmful, always amazing bugs!

For grades K–4

Developed in partnership with **Carnegie Museum of Natural History**

inflatable classrooms

Unisphere Planetarium

The night sky comes to you in our portable, inflatable planetarium. Unisphere programs are developed by staff of the Science Center’s world-renowned Henry Buhl, Jr. Planetarium and Observatory.

Capacity: 30 students

Time required: 45 minutes

Fee: \$200 includes set-up and two presentations (*shows can be different*); \$100 for each additional presentation.

Requirements: 12' ceiling height, 20' x 20' floor space, and electrical access.

Available Programs:

The Sky Above Mister Rogers’ Neighborhood

For grades PreK–K

Constellation Illumination

For grades 1–3

Map to the Stars

For grades 4–6

Mythology: Star Stories

For grades 4–8

Space and Time

For grades 7–8

Earth Balloon

This 18-foot inflatable globe provides an immersive experience in geography and environmental science as you see the Earth from inside and out.

Capacity: 30 students

Time required: 45 minutes

Fee: \$200 includes set-up and two presentations (*shows can be different*); \$100 for each additional presentation.

Requirements: 18' ceiling height, 30' x 30' floor space, and electrical access.

Available Programs:

Introduction to Geography

For grades PreK–3

The Extremes

For grades 4–6

Environmental Awareness

For grades 6–8

For the smallest scientists...

Preschool Assemblies!

See page 8 for more information.

preschool scientists

From workshops for little learners to professional development workshops for teachers, we have all of your preschool science topics covered.

Capacity: 30 students
Time required: 45 minutes
Fee: \$120 for each presentation.

NEW! DUPLO® Math

Practice your sorting and pattern-making, plus learn more math skills with DUPLO building blocks.

Hello Robo!

What is a robot and what does it do? Learn as you interact with some robots in action! This project is produced in partnership with *Spark*, a program of *The Sprout Fund*.



Wiggly Worms

Open your eyes to the world of worms through literature and observing live composting worms.

Creepy Crawly

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

My Body

Build a skeleton and learn about your skin and blood.

Rah, Rah, Recycling

Help a fishy friend clean up his river home, then create an environmentally friendly project to keep!

Pop, Pop, Popcorn! *Newly updated*

Discover how corn looks, feels, and tastes. Then take a corn seed home to grow.

Sea Life!

Learn about sea creatures, shells, and hermit crabs as you practice sorting skills.

Bubble Science

Explore the nature of bubbles with amazing bubble blowers.



preschool assemblies

Capacity: 200 students
Time required: 30 minutes
Fee: \$375 includes set-up and one presentation; \$175 for each repeat presentation.

NEW! Up in the Air

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.

Big Sound, Little Sound

Identify animal sounds and investigate how musical instruments work. Explore the differences between high and low, loud and soft sounds...then make some noise yourself!

discovery days

These fun presentations allow you to expand on important themes in your curriculum with engaging hands-on activities.

Capacity: 30 students
Time required: 45 minutes
Fee: \$120 for each presentation.

GRADE	NATURE OF SCIENCE	BIOLOGICAL SCIENCE	PHYSICAL SCIENCE	CHEMISTRY	EARTH & SPACE SCIENCE
K	The Tools of Science Experiment with tools used by real scientists and mathematicians!	Making Sense of Sound Examine the science behind our sense of sound in unique ways.	Lift, Squeeze, Stretch, & Twist Investigate how toys generate energy and how forces change their movement.	Bubble Science Explore the nature of bubbles with amazing bubble blowers.	Space as Home Base Explore space, gravity, and distance between objects in space.
1-2	Clean Water Quest Discover the impact we make on water.	Fight, Flight, or Fool Dig up some dirt about survival techniques used by insects.	Circuit City Experience magnetism and electricity at work.	Chemical Concoctions Stir up some concoctions to take home.	Weather the Storm View the water cycle in action, then cook up a storm.
3-4	Our Changing Earth Learn about climate change, create your own glacier, and watch it slide.	What Tracks Tell Us Examine animal tracks to discover habits and adaptations of North American wildlife.	Lift Off Get the scoop on Bernoulli's Principle to lift objects.	Chem in a Bag Conduct experiments that produce exciting temperature-changing results.	Spacewalking: Do You Have What It Takes? Discover the effects of pressure, high-speed impacts, and more.
5-6	Color & Light Discover what stars are made of, and create your own kaleidoscope.	Who Are You? How do your chromosomes and genes make you... well, <i>you</i> ?	Sparks Anyone? Witness shocking experiments that create noise and great visual effects.	Chemical Creations Investigate different kinds of slime through experimentation.	Saving Our Planet Learn ways we can protect the Earth through a scavenger hunt and more.

...and just for PRE-K TEACHERS!

teacher professional development workshops

Looking for a way to brush up on your science skills? Let Science on the Road come to your school district with a program designed just for preschool teachers. Stay current with hands-on science activities and teaching methods while having tons of fun. May provide ACT 48 credits. **Themes include:** Soapy Science; Magnets and Magnetism; Creative Use and Reuse.

Capacity: 30
Time required: 90 minutes
Fee: \$200
Requirements: Assembly space with table space for teachers to work.

Attend a Family Science Night for Early Learners! See page 13 to learn more

Ask about special science kits just for preschool classrooms—only \$150 each toolbox!

hands-on labs

Turn your library or multi-purpose room into a biology or geocaching lab for a day!
Combine various topics as part of your lab package.

Content themes: Life Sciences, Human Body, Technology, Science Tools

microscope labs

Our staff provides a compound microscope for each student in a guided exploration of objects invisible to the naked eye.

Capacity: 30 students
Time required: 30 minutes
Fee: \$200 includes set-up and four workshops;
\$50 for each additional workshop.
Four workshop/day minimum

Up Close With Everyday Objects

Look through magnifying glasses and microscopes to view items like fabrics, magazine pages, and feathers.

For students in kindergarten

The World of Microscopes

Make a water lens microscope. View various living and non-living specimens through a compound microscope.

For grades 1–2

Cells and Diversity

What are cells and how do they differ? Make, view, and compare slides of plant and animal cells.

For grades 3–4

Life Under a Microscope

Learn about microorganisms as seen through a microscope. View and draw living organisms.

For grades 5–6

GPS labs

Our staff provides a handheld GPS (Global Positioning System) unit for each pair of students in a guided **outdoor** Geocaching experience.

Program is not available December–February.

Two workshop/day minimum

Capacity: 30 students
Time required: 1 hour
Fee: \$300 includes set-up and two workshops;
\$100 for each additional workshop.

Schools will need to provide 4 adults per lab to monitor outdoor portion.

Bone Collectors

Using Global Positioning System technology, students will locate caches (on school grounds) containing bones to complete and reassemble skeletons.

For grades 3–4

Celebrating Cells

Artifacts contained in caches, located with GPS units, will provide clues to the function or structure of cells. Some prior knowledge of cells is advisable.

For grades 5–6

DNA Disaster

Students will use GPS to locate caches with fragments of DNA in order to build a double-stranded DNA molecule that will prevent an unauthorized top-secret investigation from going wrong. Prior study of DNA base pairing is required.

For grades 7–8

science of health

These programs are designed to support health educators as they teach students about reproduction and heredity to small groups. Our unbiased, experienced educators present more than 100 programs each year.

Capacity: 50 students
Time required: 90 minutes
Fee: \$200 for 1–30 students; \$5 for each additional student.

Wonder of Wonders (WOW)

Includes optional presentation All About HIV

Content themes: Human Body, Genetics

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 education programs.

Free Parent / Teacher Preview Opportunities

Interested teachers and parents are invited so they can be aware of how sexuality and reproduction will be presented to their children. Previews end with a question-and-answer session.

No reservations are required.

All previews begin at 7 pm at Carnegie Science Center.

Please join us on any of the following dates:

October 2, 2012	February 5, 2013
November 6, 2012	March 5, 2013
December 4, 2012	April 2, 2013
January 8, 2013	May 7, 2013

Special date just for families!

Tuesday, March 19

You're invited to this special event, for home-schooled students or for parents who prefer to view the program with their child.

Registration is required.

Call 412.237.3400, then press 7, to reserve your spot.

Begins at 7 pm at Carnegie Science Center.



club science series



Spice up any children's gathering!

Use our CLUB SCIENCE Series. Children love our hands-on activities! Parents and teachers love our minds-on science content! Customize to fit your need. Choose an hour, half-day, weekly, or a six-week session from these topics any time of year.

Bio Brainstorm

Content themes: Animals, Brain, Human Body, Life Science
Specify K-2 or Grades 3-5

Cool Chemistry

Content themes: Chemistry, States of Matter, Experimentation
Specify K-2 or Grades 3-5

Journey into Space

Content themes: Solar System, Stars & Galaxies, Earth, Flight
Specify K-2 or Grades 3-5

Grab Bag Science

Content themes: Magnetism, Engineering, Electricity, Experimentation
Specify K-2 or Grades 3-5

Junior Scientists

Content themes: Careers in Science, Experimentation
Specify 1-3 or Grades 4-6

Capacity: 25 students

Fee: \$125 per hour

Discounted pricing available for full week or 6-week bookings

Insect Investigators

Content themes: Animals, Habitats, Life Science
Specify PreK-1 or Grades 2-4

Wizardry Wows!

Content themes: States of Matter, Chemistry, Experimentation
Grades 1-4

Build-It Better!

Content themes: Engineering, Motion, Energy, Experimentation
Grades 2-4

Robots vs. Humans

Content themes: Technology, Robotics
Grades 4-6

Slam Dunk Physics

Content themes: Energy, Motion, Forces, Experimentation
Grades 4-6

science is a party!

Family Science Events

These ready-to-go packages are perfect for school carnivals or parent/child events. Each theme includes multiple table-top activities that take kids and families about 45 minutes to complete. Make something to take home!

Capacity: 150

Fee: \$400 for two hours of activity time

Requirements: 12-15 volunteers to monitor tables. Training will take place 30 minutes before event.

Choose from these topics:

- **NEW!** Ease into Engineering (Take-home activity ideas)
- Color & Light (UV-detecting ring souvenir)
- Feel the Force (Shrinky Dink necklace)
- Colossal Chemistry (Silly Putty)
- Eyes on the Environment (Biodegradable Sculpture)
- Rockin' Robots Review (Robot Binary Code Bookmark)

Early Learner Family Science Events

All the fun of our regular Family Science events made especially for the smallest scientists and their families!

Capacity: 150

Fee: \$350 for two hours of activity time

Requirements: 12-15 volunteers to monitor tables. Training will take place 30 minutes before event.

Choose from these topics:

- Spooky Science
- Spring into Science
- Hello Robo!



Science Make & Take

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

Capacity: 50-100 people per hour (varies based on activity selection)

Fee: \$150 for the first hour; \$100 for each additional hour.

Achievement & Birthday Parties

Where else will you find party themes like: Mad Mixtures, Sweet Science, Science-N-Toys, Science with a Sparkle, Wizard School, Crimesolvers, and Robots Revealed?

It's a one-of-a-kind bash when the Science Center comes to you with a party package: 1 hour of interactive demonstrations and liquid nitrogen ice cream made right in front of the crowd!

Science on the Road does special events & parties, too!
Call 412.237.3400, then press 7, today!

the details:

REGISTRATION, PRICING, AND FAQs

SCIENCE ON THE ROAD PRICING	INCLUDES	BASIC FEE	ADDITIONAL
Best Value Science Experiences	Up to 480 students	\$850	N/A
Stand-Alone Science Experience Assembly	One presentation	\$475	\$225 each
Assembly Programs	One presentation	\$375	\$175 each
Inflatable Classrooms	Two presentations	\$200	\$100 each
Classroom Discovery Days	One presentation	\$120	\$120
Microscope Labs	Four presentations	\$200	\$50 each
GPS Labs	Two workshops	\$300	\$100 each
Science of Health	Up to 30 students	\$200	\$5/student
Club Science Series (hourly, weekly, or daily)	One-hour session	\$125/hour	\$125/hour
Family Science Events	Two hours	\$400	N/A
Achievement & Birthday Parties	Up to 15 guests	\$225	\$10/guest
Science Make-and-Take	First hour	\$150	\$100/hour

“I love seeing my students transform into ‘scientists’ to explore our world.”

frequently asked questions

How far will Carnegie Science Center travel?

Anywhere! We’ve been across Pennsylvania and as far away as Arizona and California.

Is there a travel charge?

There is no travel charge within 24 miles of Carnegie Science Center. Other locations have a travel charge that is calculated by mileage. Sites that are far away from Pittsburgh may incur a hotel charge.

What kind of space do you require?

We offer a wide variety of programs scaled to different-sized spaces. Assembly programs work best in a gymnasium or auditorium.

Classroom Discovery Days, Science of Health programs, GPS, Club Science series, and Microscope Labs are designed for smaller spaces. Specific requirements for shows can be found on our website.

ready to register?

Call Science on the Road at 412.237.3400, then press 7, today!
Make sure to have all of your information ready and we’ll do the rest.

DATE:

CONTACT & BILLING INFO:

LOCATION:

GROUP GRADE LEVEL:

NO. OF ATTENDEES

SELECTED PROGRAMS:

SPECIAL NEEDS:

QUESTIONS TO ASK:

Kids who get science get great jobs.



*Presented by Carnegie Science Center
and Math & Science Collaborative*



Visit CarnegieScienceCenter.org/MSS for more information.



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