

# Catawba Science Center

## Field Trip & Program Guide

### 2014-2015

catawba  
**science**  
center



A Teacher's Guide to Pairing NC  
Common Core and Essential  
Standards with Hands-on Science

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## Reservations

Monday — Friday, 8:30 AM to 5:00 PM  
(828) 322-8169

Fax: (828) 322-1585

E-mail: [scheduling@catawbascience.org](mailto:scheduling@catawbascience.org)



*Changing Lives and Inspiring Learning Through Science and Wonder.*

**Catawba Science Center** is a nonprofit science and technology museum, offering hands-on exhibits to explore physical, natural and earth sciences.

Featured amenities include the Inventor's Workshop, freshwater and saltwater aquarium galleries - including a marine touch pool with **LIVE** sharks and stingrays, Hall of Astronomy, two featured exhibit halls, a digital planetarium theater, and special events room for school group lunches and community gatherings.



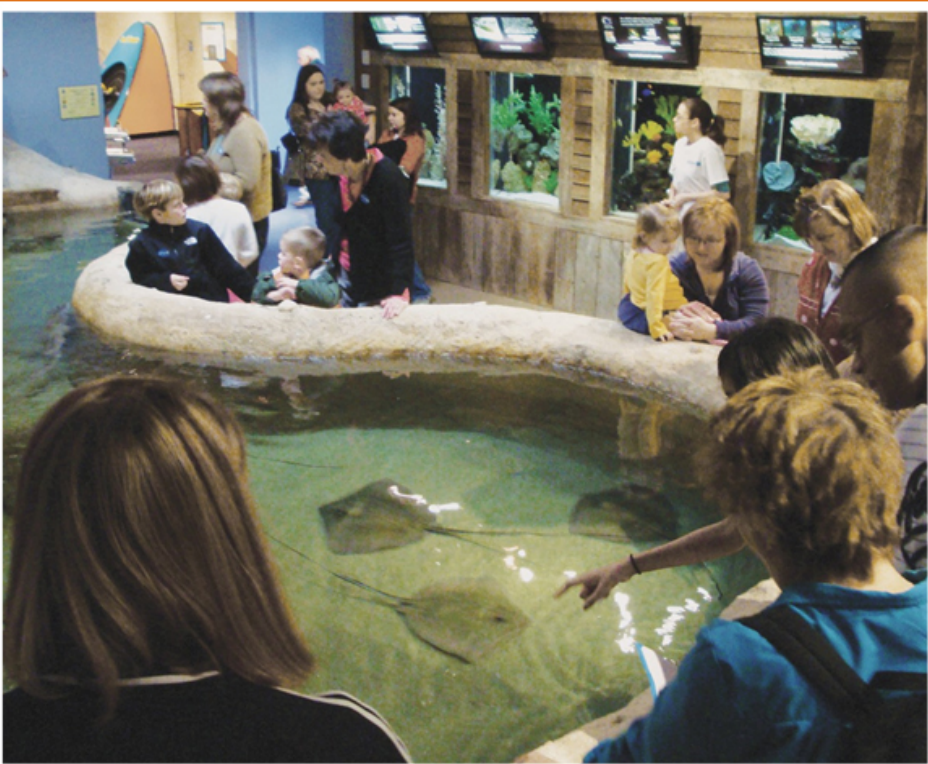
**Located on the SALT Block • Arts & Science Center**  
243 3rd Avenue NE • Hickory, NC 28601

*Only 2.5 miles from I-40, follow the directional signs,  
or download directions from [www.CatawbaScience.org](http://www.CatawbaScience.org).*

**Phone:** (828)322-8169 **Fax:** (828)322-1585

**Web site:** [www.CatawbaScience.org](http://www.CatawbaScience.org)

**Email:** [schools@catawbascience.org](mailto:schools@catawbascience.org)



### **Public Hours:**

Tuesday–Friday

10 a.m.–5 p.m.

Saturday

10 a.m.–4 p.m.

Sunday

1 p.m.–4 p.m.

### **CLOSED ON MONDAYS**

Office open: 8:30 a.m. – 5 p.m.

Catawba Science Center is a member of:  
*Association of Science & Technology Centers*  
*NC Grassroots Science Museums Collaborative*  
*Funded Affiliate of United Arts Council of Catawba County*



# Offerings at a Glance

CSC programs feature grade-specific, hands-on experiences in natural, physical and earth sciences. **All programs complement the NC Common Core & Essential Standards and goals**, as listed below each description. All CSC programs are designed to further students' understanding of the Nature of Science.

## Classroom Programs

A field trip to Catawba Science Center is an exciting opportunity for groups to share interactive learning experiences. In addition to your chosen program, your group is free to explore the entire museum. Staff is located throughout CSC to enrich your group's visit.

*Please note: CSC Member benefits do not apply for visiting students or chaperones.*

**Length:** 50 or 80 minutes (noted in descriptions)

**Group size:** 30 students maximum per program

*Available between 9 a.m. & 4 p.m., Tuesday - Friday*

## Outreach Programs

Instead of scheduling a field trip to CSC, we can bring the same exciting classroom programs to your site. Please note within each class description whether or not the program is offered as outreach.

**Length:** 50 or 80 minutes (noted in descriptions)

**Group size:** 30 students maximum per program

*Available between 8:30 a.m. & 3:30 p.m., Tuesday - Friday*

## Assembly Programs

These programs will both educate and entertain large groups. Learn fascinating facts and observe exciting physical science demonstrations.

**Length:** 50 minutes

**Group size:** 200 students maximum per outreach

program; 100 students maximum per program at CSC.

*Available between 9 a.m. & 3:30 p.m., Tuesday - Friday*

## Planetarium Programs & Shows

The planetarium/digital theater brings the night-time sky indoors. Programs are available for grades K-12, and focus on stars, the moon, planets and constellations. Groups can also choose to book a digital theater show for the program fee.

**Length:** 50 minutes for programs, shows vary in length

**Location:** CSC

**Group size:** Planetarium programs can accommodate two classes at a time, up to 65 total participants. Since programs held within the planetarium/digital dome theater have limited seating, the number of chaperones admitted per group will vary depending on available space.

*Available between 9 a.m. & 2 p.m., Tuesday - Thursday, 9 a.m. & 1 p.m. Friday*



Photo: Andrea Hernandez

# Offerings at a Glance

## Park Programs

Students in grades K-5 will use their science investigation skills to explore ecosystems, including wetlands and forest. Located in northwest Hickory, Glenn Hilton Park affords great learning opportunities, picnic shelters and play areas for visiting school groups.

The City of Hickory encourages school groups to register in advance to reserve a picnic shelter. Schools from outside Catawba County are required to pay a \$42 fee to reserve a shelter. Otherwise, first come, first served. For more information about park guidelines, or to make a reservation, call Hickory City Parks at (828) 322-7046.

**Length:** 50 or 80 minutes

(see description under grade level)

**Location:** Glenn Hilton Park

**Group size:** 30 students maximum per program

Maximum 2 groups per time slot

*Available between 9 a.m. & 4 p.m., Tuesday - Friday;*

*August - October and April - June*

## Museum Exploration Only

### **[No Program]**

Self-guided explorations without programs are available to any group of 10 or more. A special group rate for this self-guided experience is \$6 per student.

*Please note: CSC Member benefits do not apply for visiting students or chaperones.*

## Preschool Programs

CSC preschool educators use puppets, puzzles, live animals and more to introduce science to your students. Programs are available on site and as outreach.

**Cost:** \$125 per program

(contract for entire year available at varying rates)

**Length:** 45 minutes

**Group size:** 25 students maximum per program

For more info, contact [preschool@catawbascience.org](mailto:preschool@catawbascience.org)

## **Lunch Space**

CSC has a Special Events Room that accommodates up to 50 at a time. Space is reserved in 30 minute time slots and is reserved on a first come, first served basis. Groups are welcome to picnic on the public lawn. **Book early to reserve your space. No other lunch facilities are available.**



**CREATURE FEATURE** (Kindergarten): Students will become zoologists as they explore and discover different animal groups such as insects, sea life, mammals and more. Meet some of CSC's resident live animals. Program available for outreach and at CSC.

**Time:** 50 minutes

**Science Goals:** K.L.1.1, K.L.1.2

**Math Goals:** K.CC.4; K.CC.5; K.MD.3; K.G.1

**ELA:** SL1, 2, 3, 4, 6

**LITTLE SCIENTISTS** (Kindergarten): Compare and classify objects in this fun-filled class. Learn the names of some science tools. Be ready to put on your safety glasses and experiment! Program available for outreach and at CSC.

**Time:** 50 minutes

**Science Goals:** K.P.1.1, K.P.1.2, K.P.2.1, K.P.2.2

**Math Goals:** K.MD.2; K.MD.3; K.G.1

**ELA:** SL1, 2, 3, 6

**EXPLORING NATURE** (Grades K-2): Explore wetland and forest habitats. Discover the similarities and differences between plants and animals. Learn about their needs and how they change over time. Program held at Glenn Hilton Park. Available: August – October, April – June.

**Time:** 50 minutes

**Kindergarten Goals:** Science - K.L.1.1, K.L.1.2, K.E.1.1, K.E.1.3; Math - K.CC.4, K.CC.5, K.G.1; ELA-SL1, 2, 3, 6

**First Grade Goals:** Science - 1.L.1.1, 1.L.1.2, 1.L.1.3, 1.L.2.1, 1.L.2.2, 1.E.2.2; ELA-SL1, 2, 3, 4, 6

**Second Grade Goals:** Science - 2.L.1.1, 2.L.1.2, 2.L.2.1, 2.L.2.2; ELA - SL1, 2, 3, 4, 5

**EARTHY MATTERS** (Grade 1): Classify and make discoveries about soil, rocks and minerals. Learn about creatures that live in the soil. Program held at CSC.

**Time:** 50 minutes

**Science Goals:** 1.E.2.1, 1.E.2.2, 1.L.1.1

**Math Goals:** 1.MD.2

**ELA:** SL1, 2, 3, 4, 5, 6

**PUSH ME, PULL ME** (Grade 1): Experiment with forces and balance and discover how pushes and pulls can make things move. Play with all sorts of magnets and make cool discoveries! Program available for outreach and at CSC.

**Time:** 50 minutes

**Science Goals:** 1.P.1.1, 1.P.1.2, 1.P.1.3

**ELA:** SL1, 2, 3, 4, 6

**UP IN THE SKY** (Grade 1): Gaze upward and identify the things found in the sky during day and night, and observe the moon's phases. Includes a viewing of *Orion*, the story behind the constellation. Program available only at CSC in the Millholland Planetarium.

**Time:** 50 minutes

**Science Goals:** 1.E.1.1, 1.E.1.2

**ELA:** RL2; SL1, 2, 3, 4, 6

**CIRCLES OF LIFE** (Grade 2): An introduction to the life cycles of butterflies, frogs, beetles, and ladybugs using manipulatives, puzzles, and more. Play a life cycle game and build Mr. Potato Head "babies." Observe live toads or frogs and beetles to identify life cycle stages. Program available as outreach and at CSC.

**Time:** 50 minutes

**Science Goals:** 2.L.1.1, 2.L.1.2, 2.L.2.1, 2.L.2.2

**ELA:** SL1, 2, 3, 4, 5

**SOUNDS GOOD** (Grade 2): Make waves and vibrations while investigating the science of sound. Experiment with simple instruments and observe changes in pitch and volume. Program available for outreach and at CSC.

**Time:** 50 minutes

**Science Goals:** 2.P.1.1, 2.P.1.2

**ELA:** SL1, 2, 3, 4, 5

**WHEN IT RAINS, IT POURS** (Grade 2): Use magnifying lenses, microscopes, and other science tools to investigate solids and liquids through fun experimentation! Measure liquids using a rain gauge, and discover how other instruments (thermometer and anemometer) can be used to describe weather conditions. Can you make it "snow" in a test tube? Program available as outreach and at CSC.

**Time:** 50 minutes

**Science Goals:** 2.P.2.1, 2.P.2.2, 2.E.1.2, 2.E.1.4

**ELA:** SL1, 2, 3, 4, 5



**BODY CONNECTIONS** (Grade 3): Investigate body systems, including a look at the skeleton and joints. Learn the importance of good nutrition and exercise, and discover the microbes that can make you sick. *Pair this with a viewing of Astronaut in the Millholland Planetarium for additional fee.* Program available for outreach and at CSC.

**Time:** 50 minutes

**Science Goals:** 3.L.1.1, 3.L.1.2

**Healthful Living Goals:** 3.PCH.2.1; 3.NPA.1.1; 3.NPA.1.2; 3.NPA.2.3

**ELA:** SL1, 2, 3, 4, 6

**SEEDS & SOIL** (Grade 3): Dig into the outdoors! Use science tools to examine seeds and plant life up close. Sift through soils and investigate differences in soils in the wetlands and woods. Program held at Glenn Hilton Park. Available August – October, April – June.

**Time:** 80 minutes

**Science Goals:** 3.L.2.1, 3.L.2.2, 3.L.2.3, 3.L.2.4

**ELA:** SL1, 2, 3, 4, 6

**MATTER MANIA** (Grade 3): Explore the properties of three states of matter and make some fascinating discoveries about how matter changes. Mix up your own slime and take it home! Program available for outreach and at CSC.

**Time:** 50 minutes

**Science Goals:** 3.P.2.1, 3.P.2.2, 3.P.2.3

**ELA:** SL1, 2, 3, 4, 6

**SKY SEARCHERS** (Grade 3): Take a look at our solar system and find out where Earth fits. See what's in our current night sky, and discover the secrets of light and shadows. Program available only at CSC in the Millholland Planetarium.

**Time:** 50 minutes

**Science Goals:** 3.E.1.1, 3.E.1.2

**ELA:** SL1, 2, 3, 4, 6

**EARTH, MOON AND STARS** (Grade 4): Astro-adventurers will explore the relationship between the earth, moon and stars. Master the meaning behind the moon's movement. Program available only at CSC in the Millholland Planetarium.

**Time:** 50 minutes

**Science Goals:** 4.E.1.1, 4.E.1.2

**ELA:** SL1, 4, 6

**MAGNETRICITY** (Grade 4): Learn about static and current electricity, build a circuit, investigate magnetic attraction, make an electromagnet & more. Don't miss this hair-raising program! Program available for outreach and at CSC.

**Time:** 50 minutes

**Science Goals:** 4.P.1.1, 4.P.1.2, 4.P.3.1, 4.P.3.2

**ROCK HOUNDS** (Grade 4): Be a geologist! Uncover the differences between rocks and minerals. Classify rocks based on their composition. Investigate properties of minerals and perform tests to identify them. Program available for outreach and at CSC.

**Time:** 50 minutes

**Science Goals:** 4.P.2.2, 4.P.2.3, 4.E.2.1

**ELA:** SL1, 4, 6

**SQUID SCIENCE** (Grade 4): Dive in and discover the many characteristics of squid and learn how their adaptations make them suited to life in the ocean. Take a peek at the inside, too. Materials fee of \$6 per squid required.

*Students should dress appropriately for this messy experience.*

Program available for outreach and at CSC.

**Time:** 50 minutes

**Science Goals:** 4.L.1.2, 4.L.1.4

**ELA:** SL1, 4, 6

**ECOSYSTEMS IN DEPTH** (Grade 5): Explore the living and nonliving factors in forest and wetland ecosystems with a special focus on the interactions of plants and animals. Program held at Glenn Hilton Park. Available: August–October, April–June.

**Time:** 80 minutes

**Science Goals:** 5.L.2.1, 5.L.2.2, 5.L.2.3

**ELA:** SL1, 3, 4, 6

**FIRE AND ICE** (Grade 5): Use your bare hands to cause a color change and make a liquid boil. Make fascinating, hands-on discoveries about conduction, convection and radiation. Be prepared to observe fiery demonstrations! Program available only at CSC.

**Time:** 50 minutes

**Science Goals:** 5.P.3.1, 5.P.3.2

**ELA:** SL1, 3, 4, 6

**INSIDE OUT** (Grade 5): Learn about the major systems of the human body by comparing them to that of a preserved frog. Students will work in teams of four. Additional specimen fees apply (\$5.50 per frog). *Students should dress appropriately for this messy experience.*

Program available for outreach and at CSC.

**Time:** 50 minutes

**Science Goals:** 5.L.1.2

**Healthful Living Goals:** 5.PCH.4.2, 5.PCH.4.3

**ELA:** SL1, 3, 4, 6

**WEATHER UNDER PRESSURE** (Grade 5): Learn about the different factors that affect our weather. Discover how cloud formation is related to weather patterns and precipitation. Observe convection currents and the amazing effects of air pressure. *Pair this with a viewing of Force 5 in the Millholland Planetarium for an additional fee.* Program available for outreach and at CSC.

**Time:** 50 minutes

**Science Goals:** 5.E.1.1, 5.E.1.2, 5.E.1.3, 5.P.2.1

**ELA:** SL1, 3, 4, 6

**AN EYE OPENING EXPERIENCE** (Grade 6): Investigate concepts of light absorption, reflection and refraction. See for yourself how the eye works by dissecting a cow's eye. Students work in teams of 2-3 for the dissection. Additional specimen fees apply (\$3.50 per eye).

Students should dress appropriately for this messy experience. Program available for outreach and at CSC.

**Time:** 50 minutes

**Science Goals:** 6.P.1.2, 6.P.3.2

**ELA:** SL1, 2, 4, 6

**SOLAR SYSTEM 101** (Grade 6): An examination of the unique features of the members of our solar system, and their influence on each other, including tides and eclipses. A review of space exploration, past and present. See it all on the dome! Program available only at CSC in the Millholland Planetarium.

**Time:** 50 minutes

**Science Goals:** 6.E.1.1, 6.E.1.2, 6.E.1.3

**ELA:** SL1, 2, 4, 6

**IT'S ELEMENTAL** (Grade 6): Beginning chemists meet here! An investigation into atoms, elements, and physical properties of matter. Experiment with density, volume and mass, and use your new science skills to identify an unknown element. Program available for outreach and at CSC.

**Time:** 50 minutes

**Science Goals:** 6.P.2.1, 6.P.2.2, 6.P.2.3

**ELA:** SL1, 2, 4, 6

**MICRO-INVESTIGATIONS** (Grade 7): Review the basics of cell biology by microscopic examination of plant and animal cells. Observe the locomotion of living *Amoeba*, *Paramecia*, and *Euglena* and their organelles in action! Students work in small groups of 4-5. Program held at CSC Wednesday through Friday only. An additional materials fee of \$40 is required (fee covers multiple classes scheduled on the same day).

**Time:** 80 minutes

**Science Goals:** 7.L.1.1, 7.L.1.2, 7.L.1.3

**ELA:** SL1, 2, 4, 6

**READY, SET, GO!** (Grade 7): What can frogs, rockets, and roller coasters teach you about energy and motion? What does friction have to do with hovercrafts? Find out in this action-packed class. Program available for outreach and at CSC.

**Time:** 50 minutes

**Science Goals:** 7.P.1.1, 7.P.1.2, 7.P.2.1, 7.P.2.2, 7.P.2.4

**ELA:** SL1, 2, 4, 6

**WILD WEATHER** (Grade 7): Learn about the different factors that affect our weather. Observe "lightning" and sling a psychrometer to determine humidity. Pair this class with a viewing of *Force 5 in the Millholland Planetarium* for an additional fee. Program available for outreach and at CSC. **Time:** 50 minutes

**Science Goals:** 7.E.1.1, 7.E.1.2, 7.E.1.3, 7.E.1.4, 7.E.1.5

**ELA:** SL1, 2, 4, 6

**DAMSELFLIES IN DISTRESS** (Grade 8): Students work in small teams to assess the water quality of a local stream. Employ a variety of hands-on testing techniques to evaluate pH, dissolved oxygen, turbidity, nitrates, and phosphates. Discover how damselflies and other macro-invertebrates can be important indicators of water quality. **NEW equipment and tests this year thanks to an Eco Grant from 3Mgives!** Program available as outreach and at CSC.

**Time:** 80 minutes

**Science Goals:** 8.E.1.1, 8.E.1.3

**ELA:** SL1, 2, 4, 6

**RADICAL REACTIONS** (Grade 8): Review chemistry with a peek at the periodic table of elements and explore the basics of reactions with fiery demonstrations. Experiment with systems to test the Law of Conservation of Mass. Program available at CSC only.

**Time:** 50 minutes

**Science Goals:** 8.P.1.1, 8.P.1.2, 8.P.1.3, 8.P.1.4

**ELA:** SL1, 2, 4, 6

**SICK SCIENCE** (Grade 8): Delve into the microscopic world of viruses, bacteria, fungi and parasites. Perform a chemical experiment to determine how a classroom "epidemic" began and spread. Program available at CSC only.

**Time:** 50 minutes

**Science Goals:** 8.L.1.1, 8.L.1.2, 8.L.5.1

**ELA:** SL1, 2, 4, 6



# Special Topics



## Math Programs

**SHAPE DETECTIVES** (Grades 1-2): Use observation skills to study geometric shapes in animals, plants and natural objects in the world around you. Practice nonstandard units of measurement and find the area of an animal's track. Examine evidence and chart your results to determine the culprit in a shape mystery! Program available for outreach or at CSC.

**Time:** 50 minutes

**First Grade Math Goals:** 1.MD.2, 1.G.1, 1.G.2

**Second Grade Math Goals:** 2.MD.1, 2.MD.3, 2.MD.4, 2.G.1

**SUPERMARKET MATH** (Grade 3): Attention shoppers! Feeling cheated by your chips? Seriously short on cereal? Use balances to weigh food and graph the results to investigate how supermarket products measure up. Program available for outreach or at CSC.

**Time:** 50 minutes

**Math Goals:** 3.MD.2

## Dissections

**ANIMAL INNARDS** (Grades 6-12): Let a CSC educator guide your students through the dissection of an animal or organ of your choice. Students work in teams of 2-4. Specimen options and their additional cost that will be added to the program fee follow.

[Students should dress appropriately for this messy experience.](#) Program available for outreach or at CSC.

**Time:** 80 minutes for organisms or 50 minutes for organs

Squid – \$6.00

Cow eyes – \$3.50

Perch – \$7.50

Frogs – \$5.50

Pig hearts – \$10.00

Fetal pigs – \$25.00

# High School

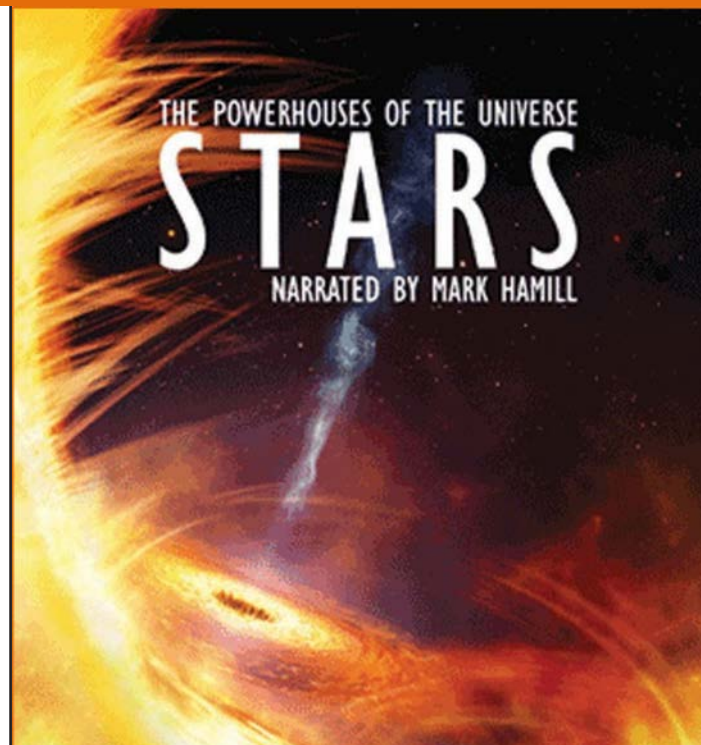


**EARTH IN SPACE:** Dive deep into the science of space with hands-on activities and a viewing of "Stars: Powerhouses of the Universe" in the Millholland Planetarium. Students will investigate the formation of galaxies, stars and planets; Earth's location and movement in the universe; the properties of stellar gases and the energy of space.

Program will be held in a CSC classroom and in the Millholland Planetarium; the program is only available at CSC.

**Time:** 80 minutes

**Earth/Environmental Science Goals:** EEn. 1.1.1, EEn. 1.1.2, EEn. 1.1.3, EEn. 1.1.4



# PLANETARIUM SHOWS

## NEW SHOW!

### *Back to the Moon for Good*

Teams from around the world are competing for the largest incentivized prize in history, by landing a robotic spacecraft on the Moon for the first time in more than 40 years. This global competition is designed to spark imagination and inspire a renewed commitment to space exploration, not by governments or countries – but by the citizens of the world. A production of XPRIZE, created by NSC Creative.

(Grades 6-12)



### Additional Titles Available:

**Astronaut** What does it take to become an astronaut and survive in the vacuum of space? This investigation on the effects of space on the human body explores the amazing worlds of inner and outer space, from floating around the International Space Station to maneuvering through microscopic regions of the human body. (K-Grade 12)

**Black Holes: The Other Side of Infinity** Journey through one of the most mystifying, awe-inspiring phenomena in the Universe. Where do they come from, and how do we find them? (Grades 9-12)

**Extreme Planets** From water worlds to molten landscapes, inhabitable moons to planets with multiple moons, these exotic worlds aren't just science fiction anymore. (Grades 6-12)

**FAQs: Astronomy & Space** A program which seeks to answer your questions. What is the brightest star in the sky? What is the most distant object you can see with just your eyes? Who invented the telescope? and more... (Grades 6-12)

**Force 5: Feel the Fury** Extreme weather takes center stage. See and feel what it would look like while standing in the middle of a deadly storm. (Grades 5-8)

**How Old is the Universe?** Experience the 14 billion year age of the universe shrunk down to just one year. (Grades 6-12)

### **Out from the Sun New Show**

Join us as we travel out from the Sun and experience some of the highlights of our solar system: the planets, asteroids, comets, and more. (Grades 6-12)

**Ice Worlds** A tour of the icy landscapes of our solar system, especially our home Earth. Explore the critical relationship between ice and life. (Grades 6-12)

**Infinity Express** A grand tour of the world of astronomy — from Mars and Jupiter to the Space Program and structure of the Universe. (Grades 6-12)

**Into the Deep** A breathtaking journey exploring the deep sea; rarely seen marine organisms: including bio-luminescent frogfish, jellyfish, vampire squid. (Grades 4-12)

**Microcosm: The Adventure Within** An armada of nanoshells, displayed as yellow submarines, travels in the blood stream, through the eye, ear & brain, in search of a deadly virus. (Grades 6-12)

**Molecularium** Review the states of matter, and learn all about atoms and molecules in this animated feature. (Grades 2-8)

**One World, One Sky: Big Bird's Adventure** Follow Sesame Street's Big Bird and Elmo as they explore the night sky with Hu Hu Zhu. Together, they take an imaginary trip from Sesame Street to the Moon. (PK-Grade 2)

### **Stars: Powerhouses of the Universe**

Every star has a story. Some are as old as time, faint and almost forgotten. Others burn bright and end their lives in powerful explosions. New stars are created every day, born of vast clouds of gas and dust. (Grades 6-12)

**The Search for Extra-Terrestrial Intelligence** Explore all sides of this topic, from the planets found around other stars, to the feasibility of traveling to the stars, and what aliens might actually be like. (Grades 4-12)

**The Secret of the Cardboard Rocket** Embark on an outstanding adventure as two children spend a night touring the solar system alongside their ship's navigator, an astronomy book, in this animated feature. (PK-Grade 2)

**The Little Star That Could** Journey with "Little Star" as he meets other stars, learns what makes them special and discovers how they combine to form starclusters and galaxies in this animated feature. (PK-Grade 5)

**The Zula Patrol: Under the Weather** Join The Zula Patrol on an exciting expedition across the sky. When the nefarious Dark Truder steals the weather from the Solar System planets, The Zula Patrol goes after him, discovering both terrestrial and planetary weather along the way. (PK-Grade 3)

## Planetarium Pairings: PLANETARIUM SHOW + PROGRAM

Reinforce the content received in your class by combining any digital planetarium feature with a classroom program for an additional fee. Pairings help expand the objectives covered during your CSC visit.

**Astronaut + Body Connection**  
(3<sup>rd</sup> Grade)



**Force 5 + Weather Under Pressure**  
(5<sup>th</sup> Grade)



**Force 5 + Wild Weather**  
(7<sup>th</sup> Grade)



**Molecularium + Matter Mania**  
(3<sup>rd</sup> Grade)

## Fractals are SMART:

Science, Math & Art!

Presented in the Millholland Planetarium

What is a fractal anyway? It is a never-ending pattern - a shape made of little copies of itself, made of even smaller copies of itself...and nature is full fractals! Nature creates branching fractals at many different sizes by repeating a simple branching process - not just in trees, but in our blood vessels, lungs and brain cells, in the rivers carved on the earth, and in lightning bolts in the sky. (Grades 6-12)

This project was supported by the United Arts Council of Catawba County through the North Carolina Arts Council, with funding from the state of North Carolina and the National Endowment for the Arts, which believes that a great nation deserves great art.

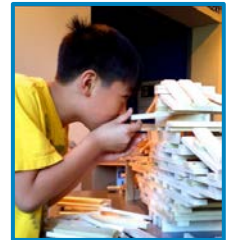
## FEATURED EXHIBIT

IMAGINE  
DESIGN  
PLAY

November 22 – January 4, 2015



Nearly 200 Imagination Playground blocks make for endless opportunities for children and adults to explore creative building play. These blocks are lightweight, non-toxic, anti-microbial and mold resistant.



Hickory Stix spark critical thinking in all ages. Made of locally sourced durable wood, they are uncoated and safe for all ages.

Open-ended free-play FUN!

## SCIENCE INQUIRY FESTIVAL

### The Mystery of Science



The mystery festival is back! Can your students figure out “who done it?” Students pick up clues at each of six exciting stations that feature guided investigations where they are able to hone their inquiry skills as they make predictions and observations, and interpret their findings. All new stations will mystify, educate, and entertain students of all ages!

**Program Requirements:** School must provide a gymnasium-sized room with access to water and electrical outlets 12 tables and chairs, and a minimum of 12 adult or high-school volunteers to manage stations. Training is provided.

**Grade levels:** K–8<sup>th</sup> Grade

**Length:** up to 5 one-hour sessions per day, or one three-hour evening session

**Cost:** \$475 first day or evening; \$275 for a second day/evening option

**Mileage:** Current federal mileage rate applies. A per diem charge and/or hotel cost is added if overnight stay is required

Available October 15, 2014–June 2015 only. Book early to reserve your date(s)!

Program	Max. # students per program	Fees Contract Schools	Fees Non-Contract Schools
Program at CSC or Glenn Hilton Park	30	\$125 per program <i>includes exhibit exploration</i> Admission for teachers & aides covered by program cost; 1 chaperone/10 students = free; additional = \$6 ea.*	\$150 per program <i>includes exhibit exploration</i> Admission for teachers & aides covered by program cost; 1 chaperone/10 students = free; additional = \$6 ea.*
Outreach Class at Your School	30	\$150 per program, or \$500 for 4 programs (same topic & day) + current Federal rate per mile	\$175 per program, or \$600 for 4 programs (same topic & day) + current Federal rate per mile
Science Inquiry Festival	400 per day	\$475 first day \$275 second day Current federal rate per mile and per diem charge outside Catawba County	\$475 first day \$275 second day Current federal rate per mile and per diem charge outside Catawba County
Science Assembly	200 - Outreach 100 - CSC	\$325 per assembly Additional same day, \$275 each additional back-to-back show Outreach charges apply	\$425 per assembly Additional same day, \$375 each additional back-to-back show Outreach charges apply
Self-guided CSC Exhibit Exploration	N/A	\$6 per person* 1 adult/10 = free; additional = \$6 ea.	\$6 per person* 1 adult/10 = free; additional = \$6 ea.

### Payment

All payments are due in full when your group arrives at Catawba Science Center (or when CSC staff arrive to deliver a program at your school) unless prior arrangements are made for invoicing.

\* **Membership admission discounts are not applicable with group visits.**

### Programs Outside the Unifour

Outreach programs conducted in counties other than Alexander, Burke, Caldwell and Catawba must total at least \$300 (plus mileage) per day. Mileage will be charged for all programs. For programs that require an overnight stay by CSC staff, a possible per diem and hotel fee may be charged.

# Planning Your Visit

Fill out this worksheet prior to contacting Catawba Science Center for an easier scheduling experience. Once scheduled, visit CSC's website to better prepare for the day of your field trip.

Program Title \_\_\_\_\_

Number of programs needed \_\_\_\_\_

You will need all teacher names. Group size for programs is limited to 30 participants.

Date \_\_\_\_\_

Alternate #2 \_\_\_\_\_

Alternate #3 \_\_\_\_\_

***Please note: CSC has the highest group visitation in March, April and May, between the hours of 9 a.m. and noon.***

While there are no guarantees, it is more likely that there will be fewer other groups visiting if you schedule *outside* of the above months and times.

Time range available for your programs \_\_\_\_\_

Do you want your program at CSC or at your school? \_\_\_\_\_

The Special Events Room (located in the planetarium building) can accommodate groups of 50 at a time for lunch. **Reserved in 30 minute time slots per group of 50, on a first come, first served basis. Groups are welcome to picnic on the public lawn. No other lunch facilities are available at CSC.**

**Special Events Room (for lunch) Yes No**

Time range needed \_\_\_\_\_

**Now you're ready to make a reservation:**

e-mail: [scheduling@catawbascience.org](mailto:scheduling@catawbascience.org)

or call: (828) 322-8169, ext. 301

We encourage you to schedule well in advance.

*Please do not fax this worksheet in lieu of a phone call or e-mail.*

**Cancellations:**

Please notify us immediately if you need to reschedule or cancel your visit. "No shows" and groups cancelling within 24 hours of their scheduled visit will be charged the full amount. In the event of a rained-out program at Glenn Hilton Park, groups are encouraged to reschedule or have a self-guided exploration of CSC exhibits.

# Family Science Nights



## Looking for a fun & educational event for your school?

Catawba Science Center would love to host your students and their families for an exciting evening, featuring an after-hours visit of exhibits and planetarium programming, or a series of themed classes. *Call (828) 322-8169 for pricing information.*

## Assemblies

**PHYSICS PHUN** (suggested upper elementary or middle school): See a variety of physical science demonstrations that appear magical and then learn the science behind them. Featured demos include tablecloth yank, Van de Graaff generator, bed of nails and more.

**Program requirements:** two 6' tables, access to electricity

**ROCKIN' REACTIONS** (suggested upper elementary or middle school): Learn some basics of chemistry through these sometimes fiery demonstrations. Program includes liquid nitrogen favorites, exploding silo, elephant toothpaste and more.

**Program requirement:** one 6' table, access to water

*Assembly programs available as outreach or at Catawba Science Center*

## Teacher Services & Benefits

### Customized Workshops

Let us design a special in-service workshop for your teachers or group. CSC educators cater the workshops to meet your needs, and can cover any science topic and integrate it with the *NC Common Core & Essential Standards*. Cost is based on the number of hours of instruction. *Call (828) 322-8169, ext. 305 for more information.*

### Supplement Your Income

CSC seeks certified K-12 educators to teach engaging science classes during the school year for evening groups and during scheduled holidays. During summer vacation, CSC also has opportunities for educators to teach throughout its annual Summer Fun Science Camp in June, July and August. Classes for youth in grades Pre-K through rising ninth are Monday — Friday, from 10 a.m. until noon.

Download an application at [www.CatawbaScience.org](http://www.CatawbaScience.org) on the employment page.

### Special Member Rates & Discounts

Receive a 10 percent discount on purchases in the Science Shop gift shop, with your teacher ID.

**Certified public & private school teachers (K-12) with current school ID in North Carolina** are also eligible for a CSC Membership at a reduced rate. *Call (828) 322-8169, join online at [www.CatawbaScience.org](http://www.CatawbaScience.org) or mail the enclosed form with a copy of your school district identification.*

### CSC Membership Application

Annual Membership valid for one year from joining/renewing

\_\_\_ Annual: Family / Grandparent, \$75\*(Teacher Discount \$10)      \_\_\_ Supporting, \$100+ \*\*

NAME(S): \_\_\_\_\_

ADDRESS: \_\_\_\_\_ CITY: \_\_\_\_\_ ST: \_\_\_\_\_ ZIP: \_\_\_\_\_

PHONE: (H) \_\_\_\_\_ (C) \_\_\_\_\_ (W) \_\_\_\_\_

EMAIL: \_\_\_\_\_

CHILDREN/GRANDCHILDREN NAMES & BIRTHDAYS: \_\_\_\_\_

\* Includes member benefits for two designated adults and their children / grandchildren 18 and under.

\*\* Includes annual member benefits, plus additional guest(s) each visit and free passes for friends.

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# Shop for Science

Don't forget to visit CSC's Science Shop gift shop, with two locations.

Teachers will find a variety of resources for the classroom, including science kits, colorful guidebooks, telescopes, ideas for science projects and a series of workbooks with engaging science experiments that support *National Science Education Standards*.



The Science Shop also features science-related gifts with aquatic and astronomy themes, as well as puppets, puzzles, posters, T-shirts, tote bags, coffee mugs and more. Prices start as low as \$1.00 for young shoppers.

Themed grab bags are also available for order in advance. To learn more about these and other items specially priced for student shoppers, contact the Science Shop manager at (828) 322-8169, x 309.

## Additional Opportunities on the SALT Block

**While you are at the Catawba Science Center...  
INCLUDE A TRIP to the HICKORY MUSEUM OF ART!**

The Art Museum offers curriculum related tours and hands-on projects to school groups of all ages. Programs incorporate competency goals from language arts and social studies to engage students through visual learning. Check our website for correlation to your grade level.

**Tours will include the interactive exhibition —  
DISCOVER FOLK ART: Unique Visions by Self-Taught Southern Artists!**

**Tour Options:**

- \$3 per student for a 1½ hour visit (includes tour plus hands-on art activity for kids to keep)
- \$2 per student for a docent led 1 hour tour only

**Call Ginny Zellmer to schedule your visit: 828.327.8576**



Located in the Arts & Science Center of Catawba Valley  
243 3rd Ave NE • Hickory, NC 28601

828.327.8576

[www.HickoryArt.org](http://www.HickoryArt.org)





# Partners in Science

## **Biology/Human Body**

Abingdon Glen Village  
Broome Associated Insurance Agency  
Century Services  
Greer Laboratories, Inc.  
Medical Center Pharmacy, Inc.

## **Biology/Plants & Animals**

BB&T/Cline Southern Insurance  
First Citizens Bank  
Turf Pro Landscaping

## **Biotechnology**

Caldwell Memorial Hospital  
Taylor & Viola, Inc.

## **Chemistry**

HK Research Corp.

## **Earth Science**

AFLAC- Gwen Butler

## **Environmental Science**

Catawba Valley Wildlife Club, Inc.  
Sharp Business Systems

## **Numbers**

Davidson, Holland, Whitesell & Co  
Wells Fargo Advisors

## **Physical Science**

Brittain Engineering, Inc.  
Design Tool, Inc.  
Hickory Brands, Inc.  
Hickory Sheet Metal Company  
Hi-Tech Fuses, Inc.  
Piedmont Natural Gas

## **Preschool**

Aiken-Black Tire Service, Inc.  
Baker Furniture, Inc.  
C. R. Laine Furniture  
Carolina Tape & Supply Corporation  
David E. Looper & Company  
United Beverages of NC, LLC  
Vanguard Furniture  
Vesco Toyotalift

## **Space Science**

Paul and Susan Fleetwood

***Thank you to CSC's Partners in Science*** for providing essential support for science education programs during the 2013-14 school year. Their support helps CSC keep program fees low so more area schools can participate in hands-on science education at CSC.

**For more information about how your business can give back to the community as a CSC Partner in Science, call (828) 322-8169 or e-mail: [dev@CatawbaScience.org](mailto:dev@CatawbaScience.org)**