

Roper Mountain



2023 - 2024 Educator's Directory Standards Based Learning Labs in Science and Social Studies

Priority registration deadline for on-site learning labs is August 25, 2023



A 402 Roper Mountain Road Greenville, SC 29615

P 864.355.8900

RoperMountain.org









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ROPER MOUNTAIN SCIENCE CENTER

Welcome!

If you want to ignite curiosity and give your students the best field trip possible, then we have an experience for you! New learning labs, unique facilities, and amazing educators will bring learning to life. New science standards will be explored for 4th and 6th grades and opportunities for inquiry abound. Check out the many new offerings we have in this directory.

In addition to your trip to the Mountain, you can connect with us multiple times over the course of the year though "Live From Roper" virtual lessons, our Virtual On Demand, and Science On Wheels. No matter if it is at Roper Mountain or at your school, students will benefit from engaging lessons.

We look forward to providing an exceptional experience and setting that will give you and your students a memorable and standards-based field trip that cannot be duplicated.

Michael Weeks

Director













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ROPER MOUNTAIN SCIENCE CENTER

Roper Mountain is an educational facility of Greenville County Schools, South Carolina. This 60 acre complex is dedicated to providing educational opportunities that excite and motivate students and teachers through immersive hands-on learning labs. The Mountain's educators also travel to schools for outreach programs in science, as well. Educational programs for the family are offered through Friday night Starry Nights planetarium shows, Afternoon Explorations and special events throughout the year. Call the Education Office at 864.355.8967 or 864.355.8925 or visit RoperMountain.org for information on all of our services.

Standards-Based Learning Labs

Learning labs held at both the center and in schools are designed to support the South Carolina Curriculum Standards in science and social studies.

How To Schedule On-Site Field Trips

- Teachers must submit a request form by the priority deadline of August 25, 2023. We will accept registrations after priority deadline expires, however they will be scheduled last.
- We are utilizing a fillable PDF registration instead of fax. Registration forms can be submitted electronically or scanned and emailed to our Scheduling Office at abuckmaster@greenville.k12.sc.us for elementary and liphilli@greenville.k12.sc.us for middle.k12.sc.us for <a hre
- Registration forms may be mailed to: Roper Mountain Science Center Education Office
 402 Roper Mountain Road, Greenville, SC 29615
- Requests received after August 25, 2023 will be scheduled last.
- Admission for learning labs is free for Greenville County Public, Private, and Home School students and teachers except for special engagement learning labs, outreach and virtual field trips. For students outside Greenville County and for charter schools, see the fees page (Page 28).
- Lunches are now available for purchase during your visit. Our GCS FANS
 (Food and Nutrition Services) Connections Café provides school meals for
 students and adults. GCS students will have their lunch accounts charged
 in our café; there is no need to collect lunch money. GCS teachers may
 also use their My School Bucks account for café purchases. For all other
 purchases, cash is required. Lunch is included in the fee for schools outside
 Greenville County.

Click here for the menu and pricing.

For questions about your meal, contact Amanda Perez at aperez@greenville.k12.sc.us or 864.355.0806.

- On the request form, rank the group (1st 5th) or choose the programs (6th 8th) you would like to attend.
- Multiple classes may request to visit the same day if noted on your registration form prior to being scheduled.
- For more information about learning labs contact the Education Office at 864.355.8967 or 864.355.8925.
- 4th, 6th and 7th grade classes may request a second visit to Roper Mountain. All other grades may schedule one on-site visit per year, but are encouraged to schedule as many "Live from Roper" virtual lessons as they would like.







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FIRST GRADE

Year-Round Adventure

This 3-part rotation will move around to different parts of Roper Mountain in order to provide students with an exciting overview of the first grade science standards. Students will enjoy a Planetarium show, Auditorium live demonstration and visit the Living History Farm or Environmental Science Building.

SPACE LIMITED

Your action packed adventure day will include:

WOW Science

Hipp Auditorium — 35 Minutes

Our science show extravaganza will touch on multiple first grade science standards. Be dazzled by our sound and light demonstrations! Get ready to marvel at some animals and see how traits and behaviors of the grown-ups compare to the babies and help them survive!!

Science Standards: 1-PS4-1, 1-PS4-2, 1-PS4-3, 1-LS1-2, 1-LS3-1

AND

Magic Tree House: Space Mission

Hooper Planetarium and Giant Dome Theater— 45 Minutes

Peek into the tree house and follow Jack and Annie on an exciting adventure as they meet an astronomer and an astronaut who guide them along a funfilled journey to discover the secrets of the Sun, Moon, planets, space travel and more.

Science Standards: 1-ESS1-1

AND

Farm Discovery

Living History Farm — 60 Minutes

What came first? The chicken or the egg!? Join us for a fun chicken business opportunity as we observe patterns in our chickens' behavior that benefit their offspring and how most young are like, but not exactly like, their parents. In our gardens and historic buildings we will explore goods and services over time while using our math skills to determine if our "chicken business" will be a success. Science Standards: 1-LS1-2, 1-LS3-1 Social Studies: 1.E.2

Math Standards: 1.ATO.1

OR

Animal Powers

Environmental Science Building — 30 Minutes

Animals have the coolest super powers! Using live animals, students will learn how animals use their bodies and powers to help them survive, grow, and meet their needs.

Science Standards: 1-LS1-1

AND

Nature by Design

Environmental Science Building — 30 Minutes

Students will learn about biomimicry through real life examples of how humans copy nature. Using engineering practices, students will design and test flight solutions, inspired by plant and animal structures, in our wind tunnels. Science Standard: 1-LS1-1







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FIRST GRADE

First Grade "May Days"

An exciting day awaits as you and your students participate in hands-on learning experiences specifically tailored to first grade learners.

These lessons are offered ONLY in May. Space is limited so these "May Days" will be scheduled on a first come, first served basis.

Choose one of the following three options for your day-long experience:

1. Light & Sound

Only Available in May

In this day-long exploration, students will discover the properties of light and sound through hands-on experiments in our Symmes Hall labs as well as enjoy an interactive presentation on space and light in the Hooper Planetarium.

Magic Tree House: Space Mission

Hooper Planetarium and Giant Dome Theater

Peek into the tree house and follow Jack and Annie on an exciting adventure as they meet an astronomer and an astronaut who guide them along a funfilled journey to discover the secrets of the Sun, Moon, planets, space travel and more.

Science Standards: 1-ESS1-1

Along with the Planetarium show, your day also includes the following experiences:

Turn It Up

Symmes Hall of Science — 30 Minutes

The sound system in our city park is too quiet for concerts! Students will help us solve this problem by testing a variety of materials and deciding how each affects our speaker's sound. After this hands-on testing, students will select the best material to improve the sound system. Along the way they will explore vibrations, compare different tuning forks, and experience sound in a whole new way!

Science Standards: 1-PS4-1

Recycling Sense

Symmes Hall of Science — 30 Minutes

Help us clean up the playground! This hands-on experience will demonstrate how light interacts through different real-world materials (translucent, transparent, and opaque). Students will investigate materials using their eyes and a flashlight. Then they will determine which materials are recyclable using our special light sensor. They will be rewarded with an illuminating surprise! Science Standards: 1-PS4-3

Garden Party

Symmes Hall of Science — 30 Minutes

Seize the daylight! Students will use an interactive shadow box to explore the patterns of day and night and observe what happens when objects block the path of light. They will use their observations to determine the best place for a garden in the park to help the plants grow big and strong!

Science Standards: 1-PS4-2, 1-PS4-3, 1-ESS1-1

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FIRST GRADE

Continued from previous page.

OR

2. Down on the Farm

Only Available in May

In this day-long exploration, students will move throughout the Living History Farm to learn about plant structures, land use, and natural resources as they interact with our farm animals, explore the gardens and discover artifacts from our community in our 200 year old cabins. They will also enjoy an interactive presentation on space and light in the Hooper Planetarium.

Magic Tree House: Space Mission

Hooper Planetarium and Giant Dome Theater

Peek into the tree house and follow Jack and Annie on an exciting adventure as they meet an astronomer and an astronaut who guide them along a funfilled journey to discover the secrets of the Sun, Moon, planets, space travel and more.

Science Standard: 1.E.3A.3

Along with the Planetarium show, your day also includes the following experiences:

Growing Garden

Living History Farm — 25 Minutes

Discover the structures that help plants grow and reproduce while helping with traditional children's chores as students learn what it takes to make a garden grow. In the case of severe weather, this lesson will take place in the one room schoolhouse.

Science Standard: 1-LS1-1 Social Studies Standards: 1.G.3, 1.E.2

Cabin Life in the 1800s

Living History Farm — 25 Minutes

Students will discover the natural resources required to build and maintain a 19th Century farm as they participate in a number of hands-on tasks and handle artifacts that will give them a feel for what it was like to be a pioneer in our community in the 1800s.

Social Studies Standards: 1.H.3

Farm Animal Fun

Living History Farm − 25 Minutes

Students will participate in the care and feeding of our barn animals, have a chance to milk our imitation cow and also make butter as we compare how goods and services have changed over time.

Social Studies Standards: 1.E.2. 1.H.3

Continued on next page.







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FIRST GRADE

Continued from previous page.

OR

3. Natural Science

Only Available in May (half-day)

Discover the wonders of nature as you spend almost 2 hours exploring our Harrison Hall of Natural Science while rotating through four exciting, standards-based lessons. Your students will have the chance to hold, touch, and closely examine some of our most popular resident creatures while moving from one interactive exhibit to another.

Science Standards: 1-LS-1, 1-LS1-2, 1-LS-3-1

The Natural Science Grouping includes the following half-day of mini lessons:

Creatures by the Seashore

Harrison Hall of Natural Science

Students will discover how coastal creatures survive as they explore the aquariums and interact with a variety of marine animals in our touch tanks.

Rainforest Exploration

Harrison Hall of Natural Science

In this immersive exploration of the rainforest, students will learn about the characteristics of this unique habitat and get up close with some of the live animals and plants that live there.

South Carolina Environments

Harrison Hall of Natural Science

While exploring the Ecology Lab, students will examine how animals survive in a variety of SC environments including mountain streams, beaver ponds, cypress swamps, and salt marshes.

Island Survival

Harrison Hall of Natural Science

Students will discover the body differences and similarities among turtles that help them survive island life.







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SECOND GRADE

Second Grade Explorations

An exciting day of learning awaits your students as they explore multiple immersive lessons! Besides taking part in two different 45-minute learning lab pairings of your choosing, students will also experience an engaging planetarium presentation. 9:30am - 1:00pm.

Planetarium Show

The Great Undersea Adventure of Barney and Beenie



This fun, educational, and entertaining show for children will allow students to make observations about the diversity of life in the Ocean habitat.. Two friends, Barney and Beenie, take care of the cleanliness of their lagoon. Many adventures await them, including the rescue of a small turtle stuck in a plastic net. At night, the friends learn the constellations.

Science Standards: 2-LS4-1

Along with the planetarium show, choose one of the following three options:

Option A (see lab descriptions on following page) **Erosion Commotion**

AND

Animal Explorations

Option B (see lab descriptions on following page)

Nature Quest

AND

Surviving In the Wild

Option C (see lab descriptions on following page)

Our Home: Then & Now

AND

Our Farm: Then & Now

Continued on next page.







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SECOND GRADE

Continued from previous page.

Along with the "The Great Undersea Adventure" planetarium show, choose one of the following three options:

Option A - Environmental Science Building or Harrison Hall of Natural Science

Erosion Commotion

Using stream tables, students will make it rain and then flood to observe how water changes the shape of the land and causes erosion commotion to a neighborhood community. After observing the rain events, teams will need to engineer solutions to prevent the neighborhood from washing away. Science Standard: 2-ESS2-1

Animal Explorations

Students will compare the diversity of animals that live in our pond and forest habitats on Roper Mountain, such as frogs, salamanders, insects, and snakes. By observing the structures of live animals, students can then infer how the structures help them function and survive in certain habitats. This lesson also includes some time to explore animals on display on our exhibit floor. Science Standard: 2-LS4-1

Option B - Harrison Hall of Natural Science Nature Quest

Students will enjoy a guided nature walk through different environments to discover how animals and plants depend upon their habitats to survive. Emphasis will be placed on diversity of life found in land and in the water. Science Standard: 2-LS4-1

(NOTE: in the event of inclement weather, and in winter students will remain indoors and explore different habitats in Harrison Hall including the Marine Lab and/or the Rainforest.)

Surviving In the Wild

From the mountains to the sea, students will explore biodiversity from around the world to discover how animals survive in their awesome habitats. Science Standard: 2-LS4-1

Option C - Living History Farm

Our Home: Then & Now

Explore change over time in the way Americans live, work and play. Using artifacts from the 1800s, students will assist with tasks around our historic log cabins, learn about historic clothes and toys, and make a dipped candle to take home!

Social Studies Standards: 2.H.3, 2.G.3

Our Farm: Then & Now

Students will experience a bygone era of farming and rural life by participating in 1800s farm chores, noting patterns of continuity and change as we observe plant needs, pollination, and seed dispersal while we work in our heritage garden; visit our blacksmith shop and one-room schoolhouse; and care for our farm animals.

Social Studies Standards: 2.H.3, 2.G.3 Science Standards: 2-LS2-1, 2-LS2-2







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THIRD GRADE

Natural Science Discovery Day

9:30am to 1:15pm

You will receive four 40-minute learning labs in the following "Discover" group.

Also see the "Social Studies and Science Experience" 3rd grade option on the next page.

Discover the Following:

Terrific Traits

Harrison Hall of Natural Science

Through handling and closely examining a variety of live animals, students will discover ways in which these unique organisms have special traits that help them survive in their environments.

Science Standards 3-LS4-2 OR 3-LS4-3

Fossils: Discover the Past

Harrison Hall of Natural Science

As paleontologists, students will observe mystery fossils to learn about life in our ancient past. Students will examine fossil specimens, hunt for marine fossils in our fossil pit and visit our dinosaur trail.

Science Standards 3-LS4-1

Survivor

Harrison Hall of Natural Science

"The tribe has spoken..." Which animals have what it takes to thrive on islands? Through hands on games and activities, students will learn about unique traits as well as difficult challenges that animals face that could determine whether or not they thrive, struggle, or fail to survive. Students will also have the opportunity to interact with live animals that call the islands their home. Science Standards: 3-LS3-2, 3-LS4-2, 3-LS4-3

Sponsored by: BOSCH

Life Cycles

Harrison Hall of Natural Science

All organisms go through changes of growth and development in their life cycles. In this lesson, students will observe differences in life cycles from young to adult using live animals. Students will compare the unique and diverse life cycles among insects, reptiles, amphibians, marine creatures, and so much more!

Science Standards 3-LS1-1







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THIRD GRADE

Farm and Science Discovery Social Studies and Science Experience

9:30am to 1:15pm

Up to four school classes rotate through four different 40-minute learning labs. Learning labs support both the Science and Social Studies state standards. **Not available in January.**

S.C. Daily Life in the 1800s

Living History Farm

By participating in daily chores that were required in the barn, garden, and farmhouse, students will investigate the cultural characteristics of the Scots-Irish families that scratched out a living on the Carolina frontier.

Social Studies Standard: 3.5.3.HS, 3.4.1.PR

Migration Mystery

Living History Farm

By working together to decipher clues, students will investigate the motivations behind human migration and how places can change as a result. Our journey will involve hands-on activities as we explore Cherokee culture through games, tools, and traditions, and delve into their forced migration, known as the Trail of Tears.

Social Studies Standard: 3.5.3.HS, 3.4.1.PR

Rainforest Adventures

Harrison Hall of Natural Science

Come experience the plants and animals that call the tropical rainforest habitat their home. The lesson will include learning about specific traits that plants and animals have that help them survive in the Roper Mountain rainforest and classroom.

Science Standard: 3-LS4-3

Marine Exploration

Harrison Hall of Natural Science

Examine marine life up close and personal as you explore our marine habitat and discover how aquatic creatures can only survive in environments where their basic needs are met.

Science Standards 3-LS4-2 OR 3-LS4-3







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FOURTH GRADE

You will receive three of the four 55-minute learning labs in the "experience" grouping.

Fourth grade teachers may request a second visit for an additional unique experience.

Physical Science Experience Light Heist

Symmes Hall of Science — 55 Minutes

There's been a theft! In this "whodunit" lab, students will use properties of light to discover which suspect stole a precious sculpture. Working as detectives, students will use special equipment to investigate shadows, light mazes, light reflection, and color filters. The evidence will shine a light on the guilty party! Science Standards: 4-PS4-2.

Powerful Decisions

Symmes Hall of Science — 55 Minutes



It's electric! After exploring different energy transformations, students will build circuits and try to power devices using different battery configurations. Small groups will then wire their individual houses with a limited supply of electricity, powering the devices they deem most important. What will you power in your house?

Science Standards: 4-PS3-2, 4-PS3-4

Need for Speed

Symmes Hall of Science — 55 Minutes



Full speed ahead! In this "fast-paced" lab, students will collect real-time motion data from specialized cars and instantaneously view the resulting graphs. Using their data, students will examine the relationship of speed to energy and help Weevil Knievel complete several feats. If you're a thrill seeker, this challenge is for you!

Science Standards: 4-PS3-1, 4-PS3-3

Patterns Lab Escape

Symmes Hall of Science — 55 Minutes



Did you get the message? Students will be volunteers in Dr. Patty Turner's lab and help her research how patterns are used to transmit information. Using patterns of light, sound, morse code, and more, students will decipher codes and unlock secrets of communication. Can you solve the puzzles and decrypt the final challenge in time?

Science Standards: 4-PS4-3
Sponsored by:

Continued on next page.







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FOURTH GRADE

Continued from previous page.

You will receive three of the four 55-minute learning labs in the "experience" grouping.

Fourth grade teachers may request a second visit for an additional unique experience.

Life Science and History Experience Coastal Catastrophes

Environmental Science and Sustainability Building — 55 Minutes

They huff and puff and blow your beaches away. Each year hurricanes, earthquakes, and tornados are responsible for massive changes to coastlines all over the world. Students will combat various natural disasters as they test a variety of beach erosion solutions and design earthquake engineering solutions. Science Standards: 4-ESS2-1, 4-ESS3-2

Sponsored by: William

The 6th Sense

Harrison Hall of Natural Science



How do snakes hunt in the dark? How do scorpions hide so well? Why do fireflies light up? Students will answer these questions and so many more as they explore the world and solve animal sized problems using a variety of animal sixth senses!

Science Standard: 4-LS1-2

Creepy Crawlies



Environmental Science and Sustainability Building — 55 Minutes

Poison glands, slimy skin, and armored bodies are just a few of the superhero like structures students will explore in this lesson while getting up close to animals that creep, slither, and crawl.

Science Standards: 4-LS1-1

American Revolutionaries

Living History Farm — 55 Minutes

By taking part in a reenactment, students will discover the hardships of military life as well as how the battle of Cowpens was a decisive turning point in our fight for freedom. Students will discover Revolutionary War spy techniques as they help to convey a secret message!

Social Studies Standards: 4.2.CE, 4.2P, 4.2CX







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FIFTH GRADE

9:30am to 1:15pm

In addition to two different 55 minute learning labs, students will discover Earth's Place in the Universe in our immersive full-dome Planetarium.

"Earth, Moon & Sun" Planetarium Show with a Live Lesson by the Astronomer

Hooper Planetarium and Giant Dome Theater — 55 Minutes

This exciting show, inspired by American Indian oral traditions, will help students learn concepts about the Earth-Moon-Sun system. Learn the basics of solar energy and why the sun rises and sets. Examine the moon's orbit, craters, phases and eclipses. Explore space travel to our moon... and beyond! Science Standards 5.ESS1-1, 5.ESS1-2

IN ADDITION

The astronomer will use the unique, full-dome planetarium program to explore stellar distances and apparent brightness, patterns of day and night, and the seasonal appearance of some stars in the night sky.

Science Standards: 5-ESS1-1, 5-ESS-1-2

Along with the Planetarium experience, choose from one of the following two explorations:

1. Matter Exploration

(see lab descriptions on following page)

Revealing Reactions

AND

Where's the Matter

2. Earth and Ecosystem Exploration

(see lab descriptions on following page)

Conservation Cadets

AND

Eco Detectives

Continued on next page.







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FIFTH GRADE

Continued from previous page.

Along with the Planetarium experience, choose from one of the following two explorations:

1. Matter Exploration

Revealing Reactions

Symmes Hall of Science — 55 Minutes

Be the detective! What happened at the food warehouse? Observe active chemical reactions under a microscope and compare physical and chemical properties to see if a new substance formed. Use these clues to reveal the cause of a mysterious fire!

Science Standard: 5-PS1-3, 5-PS1-4

AND

Where's the Matter?

Symmes Hall of Science — 55 Minutes

Can your students solve the problem of the missing materials? In this lab, students will investigate the conservation of matter by observing different reactions on a scale- did the amount of matter change? Where did it go? Students will determine where the missing material went!

Science Standards: 5-PS1-2 Sponsored by: **FLUOR**

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OR

2. Earth and Ecosystem Exploration

Conservation Cadets

Environmental Science and Sustainability Building — 55 Minutes

Using interactive Enviroscape models, students will discover how human impacts such as lawn fertilizer, litter, and even your own dogs waste can affect our land and water. With our augmented reality sandboxes, students will also shape and create landforms that impact our environment. Students will walk away from this lesson as Conservation Cadets with solutions to help protect our Earth!

Science Standards: 5-ESS3-1, 5-ESS2-1

AND

Eco Detectives

Environmental Science and Sustainability Building — 55 Minutes

Students will become wildlife biologists as they examine mystery skulls, scats, and dissected owl pellets of animals in our local ecosystems. Hands-on activities will be used to infer what kind of consumers live in our ecosystems and what they depend upon for food.

Science Standards: 5-LS2-1

Sponsored by:











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FIFTH GRADE

"Sea" It In A Day (December and January Only) 9:30am to 1:15pm

Up to four school classes rotate through four different 45-minute ocean themed learning labs. Lunch will be scheduled as part of your visit.

Island Explorers

Harrison Hall of Natural Science

Students will explore the interactions of geosphere, hydrosphere and biosphere of a distant island as they study live animals, and use technology such as augmented reality sand tables and remotely operated vehicles to discover how life prevails under such unique and sometimes harsh conditions. Science Standard: 5-ESS2-1

A Muddy Mess!

Interdependent Relationships of the Salt Marsh Ecosystem

Harrison Hall of Natural Science

Step into the wonders of the salt marsh and discover the vital role that it plays in the health of our coastline as students explore the interdependent nature of this fascinating ecosystem. Pluff mud, brackish water and live salt marsh animals will be investigated.

Science Standards: 5-ESS2-2, 5-LS2-1

Coral Reefs

Harrison Hall of Natural Science

In this immersive lesson, students discover the fragile, yet important role the coral reef ecosystem plays in the health of our oceans. Through hands-on interaction with live ocean animals in our touch tanks, students will discover the variety of animals the ocean supports.

Science Standards: 5-LS2-1

Marine Energy Flow

Harrison Hall of Natural Science

Energy flows between organisms large and small in our vast oceans. Students will put their powers of observation to the test as they examine marine life up close using live specimens and microscopes. Students will analyze the flow of energy, as well as our role in the growing plastic dilemma in our oceans. Science Standards 5-LS2-1







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MIDDLE SCHOOL ASSEMBLY COMBINATIONS

EXPLORING EARTH'S SYSTEMS

Schedule up to 300 students on the same day 10:00am to 12:15pm

Divide your classes into two groups (up to 150 students each) and attend two incredible shows back-to-back in the Auditorium and Hooper Planetarium and Giant Dome Theater. Greenville County students are free. Other students are \$12 for the assembly combination. Lunch will be scheduled from 12:15pm - 12:45pm.

6th Grade

Clouds, Climates and Catastrophes!

Hipp Auditorium — Symmes Hall of Science — 60 Minutes

Join us as we explore the powerful relationships between water, energy, and Earth that lead to the weather conditions we experience in our everyday lives. See giant clouds form before your eyes, lightning jump across the stage from our Tesla coil, temperature changes on screen through an infrared camera, and many other breathtaking demonstrations. Students will gain a better understanding of the hydrologic processes in the atmosphere, the effect of warm and cold air masses on weather, and how these processes affect climate on the different regions of Earth.

Science Standards: 6-ESS2-4, 6-ESS2-5, 6-ESS2-6

Sponsored by: **FLUOR**

AND CHOOSE ONE of the Hooper Planetarium shows listed below

"Tales of the Maya Skies"

Hooper Planetarium and Giant Dome Theater — 60 Minutes

"Tales of the Maya Skies" tells the story of how the ancient Maya interwove astronomy and culture to create a stable society that spanned 2,000 years, from 500 BC to 1500 AD. Mayan culture, life, architecture, and legends were intertwined with the ancient Maya's scientific observation and recording of planetary movements.

Social Studies Standard: 6.2.CC

OR

"Dynamic Earth"

Hooper Planetarium and Giant Dome Theater — 60 Minutes

In this highly engaging full-dome show, stunning satellite data visualizations and photorealistic animations are combined to provide unprecedented insights into the inner workings of Earth's dynamic climate system and the influence that the Earth-Sun system, plate tectonics, and the carbon cycle has upon its energy trails and environmental systems.

Science Standards 6-ESS2-1, 6-ESS2-4, 6-ESS2-5, 6-ESS2-6

Both shows include "H2O Cycle"— 15 Minutes

Using live action videography students will be immersed in the steps of the water cycle using the backdrop of the Upstate of South Carolina. Science Standards: 6-ESS2-4

Looking for "Hands-On Labs"? Check out the next page.





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MIDDLE SCHOOL HANDS-ON LEARNING LABS

Schedule Up To 150 Students per day 9:30am to 1:15pm

Divide your classes into six groups to rotate through three different hands-on learning labs. Lunch will be scheduled as part of your visit.

Sixth grade teachers may request a second visit for an additional unique experience.

6th Grade Organisms and Earth Systems Lab Experience

Cataclysmic Collisions

Only Available January - April Environmental Science and Sustainability Building Three 55-minute learning labs

Crater Chronicles, Cellular Collapse, Bones From the Blast- Asteroids and comets in Earth's long history have struck earth creating cataclysmic events and causing mass extinctions. Paleontologist apprentices will be needed and trained to help look at present life forms, fossils of past life, and other clues to what events from these geoscience processes caused the extinction of most life forms - from one-celled organisms to dinosaurs. These apprentices will also model those impacts from catastrophic events that changed the earth's surface from the rising of large peaks to volcanoes and meteorite/comet impacts. Science Standards: 6-LS1-1, 6-LS1-2, 6-ESS1-4, 6-ESS2-2

Want to bring more students at once? Check out the Middle School Assembly combination (page 16).







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MIDDLE SCHOOL ASSEMBLY COMBINATIONS

MATTER, ENERGY AND ECOSYSTEMS

Schedule up to 300 students on the same day 10:00am to 12:15pm

Divide your classes into two groups (up to 150 students each) and attend two incredible shows back-to-back in the Auditorium and Hooper Planetarium and Giant Dome Theater. Greenville County students are free. Other students are \$12 for the assembly combination. Lunch will be scheduled from 12:15pm-12:45pm.

7th Grade

Way Cool Science!— **Physical and Chemical Changes in Matter**Hipp Auditorium — Symmes Hall of Science — 60 Minutes

Watch your students' reactions as they classify unknown changes as physical or chemical through our exciting, interactive demonstrations! Witness fire, explosions and extreme temperatures. We'll explore physical properties, the law of conservation of matter, and witness the effects of dangerous temperatures on different states of matter. Students will get an up close and personal view of chemical reactions, changes in states of matter, and acids and bases revealed by dramatic indicator changes.

Science Standard: 7-PSI-2, 7-PSI-5

AND

"Habitat Earth" - Living in a Connected World

Hooper Planetarium and Giant Dome Theater - 45 Minutes

Living networks connect and support life forms large and small—from colonies of tiny microbes and populations of massive whales to ever-expanding human societies. Discover what it means to live in today's connected world. Dive below the ocean's surface to explore the dynamic relationships found in kelp forest ecosystems, travel beneath the forest floor to see how Earth's tallest trees rely on tiny fungi to survive, and journey to new heights to witness the intricate intersection between human and ecological networks.

Science Standards: 7-LS2-1, 7-LS2-2, 7-LS2-3

In addition, students will also experience:

Ecosystems

Hooper Planetarium and Giant Dome Theater - 15 Minutes

Ewww, a maggot. But it's only a decomposer! Students love to be "grossed out" and at the same time they will learn about the many important roles of living and non-living factors in an ecosystem. The show includes seventh grade terminology such as abiotic, consumer, community, omnivore, food web and many more – from the types of ecosystems to the roles of plants and animals and how it all interrelates.

Science Standards: 7-LS2-1, 7-LS2-2, 7-LS2-3

Looking for "Hands-On Labs"? Check out the next page.







P 864.355.8900

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MIDDLE SCHOOL HANDS-ON LEARNING LABS

Schedule Up To 150 Students per day 9:30am to 1:15pm

Divide your classes into six groups to rotate through three different hands on learning labs. Lunch will be scheduled as part of your visit.

Seventh grade teachers may request a second visit for an additional unique experience.

7th Grade Matter Lab Experience:

EcoSolutions: Make It Better With Chemistry



Only Available September - January

Symmes Hall of Science

Three 55-minute learning labs

Our products make the world better! Working through three separate investigations, students will:

- Generate hydrogen gas from water to use as a clean fuel
- Identify chemicals that were left unlabeled in an abandoned lab for safe disposal
- Test a natural, biodegradable alternative to a synthetic product

Throughout these investigations, students will make long-term decisions that help the environment while also maximizing profits. We need minds like yours to solve today's problems for a better tomorrow.

Science Standards: 7-PS1-2, 7-PS1-3, 7-PS1-5

Sponsored by: **FLUOR**_®

OR

7th Grade Ecosystem Lab Experience:

Ecology Survival Challenge

Only Available January - April

Environmental Science and Sustainability Building

Three 55-minute learning labs

Animal Threats, Chemical Threats, Eco Threats - The supervolcano that is located underneath Yellowstone National Park has erupted and a giant cloud of ash will reach Roper Mountain in 4 hours! Time is of the essence as students investigate animal behaviors, water quality, and limited resources to see how the environment would be affected by such a natural disaster.

Science Standards: 7-LS2-4, 7-LS2-1

Want to bring more students at once? Check out the Middle School Assembly combination (page 18).







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MIDDLE SCHOOL ASSEMBLY COMBINATIONS

MOTION, WAVES, AND EARTH'S PLACE IN THE UNIVERSE

Schedule up to 300 students on the same day 10:00am to 12:15pm

Divide your classes into two groups (up to 150 students each) and attend two incredible shows back-to-back in the Auditorium and Hooper Planetarium and Giant Dome Theater. Greenville County students are free. Other students are \$12 for the assembly combination. Lunch will be scheduled from 12:15pm - 12:45pm.

8th Grade

Force, Impacts, and Energy

Hipp Auditorium — Symmes Hall of Science — 60 Minutes

The Force is Right! You could be the next contestant on our physical science themed game show! Check out our most thrilling physics demonstrations of waves, collisions, and forces! We'll observe and analyze collisions--some involving audience members! Get ready to see sound waves dancing--in fire! We will also test a giant electromagnet! How much can it lift? Get ready to see how much fun physics can be!

Science Standards: 8-PS2-1, 8-PS2-2, 8-PS2-3, 8-PS4-1

AND

Earth's Place in the Universe

Hooper Planetarium and Giant Dome Theater — 60 Minutes

Earth, moon, sun and stars ... we'll take a journey to investigate the mysteries of our solar system and beyond. Why does Earth stay in orbit? How often do the moon phases repeat? Exactly how big is the sun? What galaxies are closest to our own? We'll explore the answers to these questions and more in a unique setting that will engage your senses; under our immersive, giant 50-foot curved dome of the Planetarium. Students will walk away with a greater understanding of the Earth and Space Science Performance Expectations after this specially aligned lesson.

Science Standards: 8.ESS1-1, 8.ESS1-2, 8.ESS1-3







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LIVE FROM ROPER

FREE LIVE LESSONS FROM ROPER MOUNTAIN

BACK BY POPULAR DEMAND!

Connect with our specialist via Zoom throughout the year as we offer new interactive lessons every four weeks. Each half hour lesson is unique, engaging, and based on South Carolina and national standards.

Visit RoperMountain.org for these free offerings throughout the year. Multiple virtual visits encouraged.

2nd Grade

1st Quarter - Landforms of Earth & Magic of Water

2nd Quarter - Observing Matter &

Heating and Cooling Matter

3rd Quarter - Changes Around Us & Preventing Erosion

4th Quarter - How Plants Grow & How Seeds Travel

3rd Grade

1st Quarter - Balancing Forces & Magic of Magnets

2nd Quarter - Surviving the Seasons & Survival in Numbers

3rd Quarter - Fossils & What Does It Take to Survive?

4th Quarter - Weather Predictions

& Severe Weather Solutions

4th Grade

1st Quarter - Energy Transfer &

The Power of Natural Resources

2nd Quarter - The Power of Erosion & Waves in Action

3rd Quarter - Behaviors of Light &

Cause and Effect of Motion

4th Quarter - Carnivorous Plants & Animal Senses

5th Grade

1st Quarter - Properties of Matter & Slime Time

2nd Quarter - Who Needs Dirt? & The Circle of Life

3rd Quarter - Saltmarsh Discovery & Impact of

Community Growth on the Environment

4th Quarter - Gravitational Pull &

The Night's Sky Throughout the Seasons

CLICK HERE TO REGISTER

Virtual On Demand

CLICK HERE FOR DETAILS AND TO REGISTER



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P 864.355.8900

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VIRTUAL ON DEMAND

Give students the excitement of a field trip to Roper Mountain, even if you can't leave the school! Roper Mountain's dynamic instructors come directly to your classroom through two-way video conferencing. Each program is unique, engaging, and based on South Carolina and National standards.

Free for Greenville County Schools. Visit https://www.ropermountain.org/educators.asp?titleid=vft for other fees.

For questions about Virtual Field Trips, contact Jasmin Poor at jpoor@greenville.k12.sc.us or 864.355.8930.

Click HERE for details on our Virtual On Demand offerings.







CLICK HERE FOR DETAILS AND TO REGISTER



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SCIENCE ON WHEELS OUTREACH PROGRAMS

Bring Roper Mountain Science Center to your school! Our standards based outreach programs are designed to enhance the learning experience of students in grades K-8. Program offerings include large group assembly programs as well as single class programs such as our animal classroom programs and our portable planetarium.

For questions about Science On Wheels, contact Jennifer Romatelli at jromatelli@greenville.k12.sc.us.

Click HERE for our Science on Wheels offerings and fees.



















P 864.355.8900

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PUBLIC EVENTS & PROGRAMS



Open every Friday Night from January through November

Planetarium Shows

Purchase tickets online. Tickets purchased are for ONE showtime ONLY.

4:30pm, 6:00pm and 7:30pm Showtimes Include: Feature Show (changes quarterly)

- SpacePark 360 Virtual Rollercoaster
- Viewing in the Daniel Observatory (Observatory opens at 8:00pm)

Visit RoperMountain.org for show details and to pre-purchase tickets

• Early arrival strongly recommended



Holiday Laser Shows

Roper Mountain plans to bring back Holiday Laser Shows in Hooper Planetarium this winter.

Check RoperMountain.org in November for more information.



PUBLIC EVENTS & PROGRAMS



September 14 - May 10

Thursdays and Fridays*- 1:30pm-5:00pm

*excluding days when RMSC is closed for Greenville County Schools Winter & Spring Breaks

Continue your learning adventures throughout the school year in some of your favorite spaces at Roper Mountain as part of our Afternoon Explorations program:

- Interact with exhibits in the Environmental Science and Sustainability Building including the highly popular Nature Exchange.
- Encounter life-size prehistoric creatures on the Dinosaur Adventure Trail.
- Enjoy a stroll through our beautiful Butterfly Garden.
- Engage in creative outdoor play in Wildwood.

Afternoon Explorations Admission

Cash • Check • Credit Cards

\$8.00 Adults

\$7.00 Children Ages 3-12 (age 3 and up)

FREE RMSC Members









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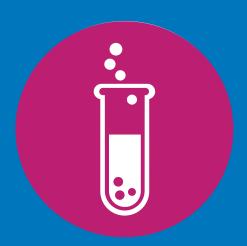
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SUMMER ADVENTURE

Summer Adventure is returning in 2024! Check RoperMountain.org for more information.



Our program is absolutely free for South Carolina public school teachers grades 1-12!

All courses are FREE and include:

- Free science materials
- Innovative ideas and hands-on ideas taught by master science teachers
- Recertification credit



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SCIENCE PLUS INSTITUTE

PROFESSIONAL DEVELOPMENT

Participatory Learning, Understanding, and Sharing



Join us for this year's Science PLUS Institute!

Science PLUS is a professional development program for public SC Science Teachers. Each course is grade specific and focuses on providing hands-on classes emphasizing the SC Science Standards

Fall and Spring

Mini-PLUS one-day events hosted at RMSC

Summer

Week-long hosted at the Roper Mountain Science Center

Housing, lunch, and materials are all provided to participants FREE of charge

How do I learn more?

Click HERE or visit RoperMountain.org and click on the Science PLUS page under the Educators tab.







P 864.355.8900

RoperMountain.org



PLANNING YOUR VISIT

Confirming Your Visit

Once scheduled, we will mail you a "FIELD TRIP NOTIFICATION." It will list the date, times and learning labs you are assigned. If you are sharing a bus with a second teacher, you should make contact with her/him and be sure the date works around your school schedule. Contact the education office immediately at 864.355.8967 or 864.355.8925 if it does not.

Planning and previsit information, inclement weather policy and a map of Roper Mountain Science Center may be accessed at RoperMountain.org.

Schedule Your Bus

After obtaining permission for the field trip, it is important that you schedule a bus as soon as possible. RMSC does NOT schedule buses.

Reminder Notice

Several weeks before your field trip, you will be sent an additional "FIELD TRIP NOTIFICATION" as a reminder of your trip, listing the date of your field trip. Additional materials may be included along with a map of the center's facilities.

Arrival

Most learning labs begin at 9:30am. Please arrive 15 minutes before the learning lab starting time. Note: Some learning lab times may vary.

Picnicking and Lunches

Lunches are now available for purchase during your visit. Our GCS FANS (Food and Nutrition Services) Connections Café provides school meals for students and adults. GCS students will have their lunch accounts charged in our café; there is no need to collect lunch money. GCS teachers may also use their My School Bucks account for café purchases. For all other purchases, cash is required. Lunch is included in the fee for schools outside Greenville County.

Click here for the menu and pricing.

For questions about your meal, contact Amanda Perez at aperez@greenville.k12.sc.us or 864.355.0806.

Cancellation

If you must cancel a learning lab or visit, please contact the education office IMMEDIATELY at 864.355-8967. or 864.355.8925 We will attempt to reschedule your visit, but it may not be possible.

Chaperones

We request that teachers bring no more than two chaperones per class. No additional students or siblings not in the registered class may accompany chaperones. Chaperones should check in at your school for their credentials. RMSC is not able to check in your chaperones at our location.

Pre-visit

The educational value of your visit will be improved if you prepare your students in advance. We recommend you do the following:

- Explain the purpose of the field trip to students
- Describe the schedule of activities for the day.
- Review appropriate vocabulary.
- Utilize "Live from Roper" lessons as pre/post virtual visits.

Class Size

- Planetarium Programs: Max of 162 people (students and adults)
- All Other Learning labs: 1 Class ONLY (plus teacher and two chaperones)
- Teachers are not allowed to combine two classes into one learning lab

Continued on next page.







P 864.355.8900

RoperMountain.org



PLANNING YOUR VISIT

Continued from previous page.

Special Education/Challenge Classes

All learning labs are available to all students in the grade levels shown in the guide. To assist our instructors in preparing for your class, please note the grade level at which your students work, as well as any special needs they may require.

Home Schools: Guidelines for Scheduling

Individual home schools must request a visit as a class through the **home school association** of which they are members. Home school association classes must have a minimum of 12 students and no more than 27 students, plus a teacher and **2 chaperones**. The home school association's teacher is responsible for coordinating the field trip and supervision of all students. Students must be **age and grade appropriate** (no siblings or yonger children) to the learning labs being requested. Requests are subject to the deadline listed in this guide. The center cannot accept requests from individual home school parents, nor can we be responsible for organizing a class made up of home school students. Home schools who are members of associations outside of Greenville County will be charged the learning lab costs.

Roper Mountain Science Center Learning Lab Costs

Greenville County Public Schools — FREE

Public, Private, and Home School Associations One or more Learning Labs — Free

Greenville County Charter Schools

**Two or more Learning Labs — \$15 per student, lunch included Middle School Assembly Combo — \$12 per student, lunch included

Schools Outside of Greenville County

Two or more Learning Labs — \$15 per student, lunch included Middle School Assembly Combo — \$12 per student, lunch included

All Teachers & Chaperones — FREE

Schools will be invoiced on the day of their visit. The center reserves the right to ask school classes outside of Greenville County to post a deposit for their scheduled learning labs. Deposits are refundable up to 20 business days before the visit.

We CANNOT accept credit card payments over the telephone.

Contact Information

Education Office 864.355.8967 or 864.355.8925 **Address** 402 Roper Mountain Road Greenville, SC 29615

RoperMountain.org



COMMUNITY PARTNERS

We gratefully acknowledge these individuals, foundations, organizations and corporations whose annual gifts have helped to support Roper Mountain Science Center.

VISIONARY - \$20,000+

BOSCH Community Fund
Community Foundation of
Greenville
The Daniel-Mickel Foundation
Dodge Industrial, Inc.
Duke Energy Foundation
Fluor Golf for Greenville
Greenville Water
John I Smith Charities
Lockheed Martin Corporation
Piedmont Arthritis Clinic, PA
ReWa

EXPLORER - \$15,000

South Carolina Farm Bureau

BMW Manufacturing Fluor Foundation GE SEW Eurodrive

VOYAGER - \$10,000

Audacy Communications Tom and Linda Hamilton Milliken, Inc. South Carolina Charities Spartanburg Community Foundation

Visit RoperMountain.org for details on how you can become a community partner!



Support Roper Mountain and enjoy benefits by becoming a member!

Benefits Include:

- •Free admission to Summer Adventure, Afternoon Explorations, Starry Nights and select special events
- •Discounted admission to Planetarium Laser Shows
- •Summer Camp, discounts and access to early registration
- •Program and events discounts as noted on the website
- Admission to over 300 science centers and museums world wide. Visit the Association of Science-Technology Centers and choose Passport Program to find participating facilities

Visit RoperMountain.org to join today!



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