GEORGIA

2019-2020 Fieldtrip Directory

Standards Based Discovery and Planetarium Programs in Science, Technology, Engineering, Mathematics, and Social Studies

Registration Deadline is June 5, 2019
Dear Educators,

The Ruth Patrick Science Education Center (RPSEC) is a unique cooperative effort by the University of South Carolina Aiken, local industry, and public school districts in the Central Savannah River Area. The purpose of our collaboration is to enhance the Science, Technology, Engineering and Mathematics (STEM) education experience in the elementary, middle and high schools within the CSRA.

Our hands-on approach to teaching is designed to help students experience the beauty, the order and the power of science and mathematics, as well as explore the interest and fun of discovery. A visit to the RPSEC enables students, teachers and the public to experience science and mathematics in a challenging yet exciting way! We know our unique facility will provide a fieldtrip experience that will not be forgotten, as we are inspired to infuse a love for learning science, mathematics, and technology.

Please visit our website [http://rpsec.usca.edu/student/](http://rpsec.usca.edu/student/) to schedule your Ruth Patrick Science Education Center experience today!

Kelly Schepens
Student Programs Director
REQUEST A FIELD TRIP
The Ruth Patrick Science Education Center offers more than 50 different hands-on, inquiry-based K-12 student programs that are aligned to state standards. Different programs are offered each month. A calendar of offerings, program descriptions, and reservation request forms can be found on our website at: http://rpsec.usca.edu/student/. Offerings for the upcoming school year are posted online in mid-April. The deadline to submit reservation requests is early June. Reservation requests for student programs are submitted online via the reservation link provided. Both the RPSEC and you will receive a copy of your request via e-mail after submission. Requests received after the deadline will be placed on a waiting list. No reservations will be accepted by telephone, fax or mail.

CONFIRM YOUR FIELD TRIP
All scheduling for the upcoming school year is done in the summer. You will be notified via e-mail that your request has been received. Once your visit has been scheduled, you will be e-mailed a confirmation contract letter. Confirmation contract letters MUST be accepted via e-mail reply to the RPSEC by the date specified, or your scheduled program(s) will be cancelled and filled from the waiting list.

RESCHEDULING A VISIT
Because we receive many more requests than we can serve, it is highly unlikely that we will be able to reschedule a visit unless we have a cancellation.

CANCELLATIONS
If you need to cancel a visit, we must receive written notification at least FOUR weeks in advance so we can fill it from our wait list. Written notification of a cancellation MUST be received at least 4 weeks prior to the reserved date or a $25.00 cancellation fee PER PROGRAM will be assessed. Groups from that school will not be permitted to visit the RPSEC until the fee has been paid. *NOTE: An additional $10.00 PER PROGRAM will be assessed if your group misses your scheduled visit without contacting the RPSEC prior to the start time.

SCHEDULING RESTRICTIONS
• There is a minimum of 10 students to schedule any program.
• There is a maximum of 30 students per Discovery Program.
• There is a maximum of 60 students per visit for a Double Group (students rotate through 2 programs).
• There is a maximum of 90 students for a Triple Group (students rotate through 3 programs).
• Please do not bring more than 90 students on the same day unless special arrangements have been made in advance and confirmed in writing.
SINGLE, DOUBLE, and TRIPLE GROUPS

• **Teachers bringing 10 to 30 students** may select one, two, or three programs per visit. A group of this size is considered a “Single Group” whether attending one or multiple programs.

• **Teachers bringing 31 to 60 students** must select at least two (2) programs for a “Double Program” visit. Students will rotate through the programs, with a visit of approximately 3 hours (includes a 30 minute lunch). Choose programs that are offered in the same month, only one of which may be a planetarium program.

• **Teachers bringing 61 to 90 students** should schedule three (3) programs for a “Triple Program” visit. Students will rotate through the programs, with a visit of approximately 4 hours (includes a 30 minute lunch).

• When choosing multiple programs, please select programs that are offered in the same month. Only one of the programs can be a planetarium program.

• EcoHikes in the woods and STEP classes at Audubon or SRS cannot be combined with RPSEC programs on the same day. However, teachers may request RPSEC programs and STEP visits during the same year.

• We may be able to accommodate larger groups in a shorter time frame if special arrangements are made in advance. Instructions for larger groups can be found at: [http://rpsec.usca.edu/student/ExpandedDoubleTriple.pdf](http://rpsec.usca.edu/student/ExpandedDoubleTriple.pdf)

PROGRAM REQUEST GUIDELINES

• Each class may attend up to four programs over the course of the year. Please prioritize your program requests. We will schedule your programs, subject to availability, in the order in which you list them on your reservation request form.

• We recommend that one teacher make a reservation request for the entire grade level. We can accommodate up to 90 students per day (typically 9:15 AM – 1:15 PM) unless special arrangements are made in advance.

• Programs are 60 minutes each unless stated otherwise. Please allow for transition time between programs.

• Due to the anticipated volume of program requests, it is highly unlikely that late requests will be filled.

PROGRAM START TIMES

Programs begin at 9:15 AM, 10:30 AM, 12:00 noon, and 1:15 PM. Most groups eat lunch from 11:30 – 12:00. Program start times can be adjusted in advance upon request.

ARRIVALS and DEPARTURES

Please take a headcount before you enter the RPSEC. The group leader should report to the main office upon arrival with the total number of students and adults. Groups should enter through the double door entrance. Line up your students in one, two or three even groups in the gallery (maximum of 30 students per group). Please make checks payable to USCA, or let us know that you need to be invoiced. Please notify us as soon as possible if you will not be able to arrive at your assigned time or if you will need to leave early (803-641-3313).

LUNCH FACILITIES

Lunch facilities at the RPSEC can accommodate up to 90 students, but you must reserve the lunchroom or picnic tables prior to your visit on a first come, first served basis. Participants should bring bag lunches and drinks. The RPSEC does not have food available. IMPORTANT: Double and triple groups should pre-divide their lunches to eat in two or three separate rooms.

CHAPERONES

Adult chaperones are welcome and encouraged to attend. Please note:

• **ONE** adult per 8 students will be given free admission to planetarium programs. Adults exceeding this maximum will be charged a special admission price of $3.75 each. All teachers, school staff, bus drivers and parents are considered as part of the “adult” count.

• There is no charge for adults attending discovery programs (non-planetarium).

• To limit distractions to learning, children under the age of 4 are not permitted to attend any student programs at the RPSEC, including the planetarium.

• All visitors should turn off cell phones and audible personal electronic devices during their visit.
STUDENT PROGRAM FEES

Discovery Programs
Aiken County Public Schools.............................................................. Prepaid by the district (non-planetarium)
All Other Schools.............................................................................. $3.75 per student, per program

Planetarium Programs
All Students .......................................................................................... $3.75 per student, per program
Adults: One adult per eight students is admitted free. Additional adults pay $3.75 each. (Adults = teachers, school staff, bus drivers and chaperones)

All Programs
Cancellation Fee (less than 4 weeks written notice), PER PROGRAM ...........$25.00
No-Show Fee, PER PROGRAM ...............................................................$35.00

ACADEMIC STANDARDS
All student programs are aligned with South Carolina and Georgia academic standards. Each lesson is designed to actively engage students in hands-on, inquiry-based learning, and many of our programs are interdisciplinary. South Carolina and Georgia academic standards correlations, children’s literature connections, pre- and post-visit activities, and more are available on our website: http://rpsec.usca.edu/student/.

ADA STATEMENT
Please indicate if you need any special services, assistance, or accommodations to participate in our programs by contacting us in advance at RPSEC@usca.edu or (803) 641-3313.

CONTACT INFORMATION
Ruth Patrick Science Education Center
University of South Carolina Aiken, 471 University Parkway, Box 3, Aiken, SC 29801
Telephone: 803-641-3313
Fax: 803-641-3615
E-mail: RPSEC@usca.edu
Discovery and Planetarium Programs are **NOT** offered every month. Please see the calendar below along with program descriptions for **MONTHLY** offerings. When planning your visit, please select programs offered in the **same month**.

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### 2019-2020 Georgia Elementary Level Student Programs Calendar

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<td><em>One World, One Sky Animals with Backbones</em></td>
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<td><em>Lunar Design Challenge</em></td>
<td><em>Polygon Puzzle Vertebrate Taxonomy</em></td>
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<td><strong>DECEMBER</strong></td>
<td><em>Habitat Earth OR Who Discovered America?</em></td>
<td>Marvelous Minerals</td>
<td>Merry Measuring Planet Earth Rocks</td>
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<td><em>The Weather Kid Pix Plantastic</em></td>
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* Indicates a Planetarium Program (you may only select **ONE** planetarium show per visit)

** Indicates an Ecohike (these hikes are a stand alone program offered off-site at Hitchcock Woods)
MONTHLY PROGRAM PAIRINGS

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PLANETARIUM PROGRAMS

IN MY BACKYARD  
*Months offered: JANUARY, FEBRUARY, APRIL, MAY*
Join Fred Penner from TV’s Nickelodeon as he explores his backyard searching for both things large and small. We will also learn about the reason for seasons, colors in the rainbow and even count together. This show is geared towards the youngest stargazers and encourages exploring your own backyard with fun songs and audience participation! Standards: SKE1.a, SKE1.b

DISCOVERY PROGRAMS

ALL SORTS OF SORTING  
*Months offered: APRIL & MAY*
Classify all sorts of objects by observing similar properties in this hands-on, discovery program. Students will describe and sort a variety of items using one or more attributes including size, shape, color, pattern, and texture. Standards: SKP1.a, SKP1.b, SKP1.c

DIG IN!  
*Months offered: APRIL & MAY*
Students will examine, compare, and sort Earth materials. Using magnifiers, they will investigate and describe properties of minerals, rocks, sediments and soil. Standards: SKE2.a, SKE2.b, SKE2.c

EXPLORING OUR SENSES  
*Months offered: JANUARY & FEBRUARY*
What do our five senses tell you about the world around us? Let’s find out as we explore all of our senses with fun, cooperative sensory activities. Test your eyes with optical illusions, listen for mystery sounds, explore touch with unknown objects, sniff out every day smells and use your taste buds to guess the flavor of different jellybeans. Standards: SKP1.b

INSECT INSPECTORS  
*Months offered: JANUARY & FEBRUARY*
Students will learn about the major body parts of insects. They will test different insect “mouth parts” at feeding stations, and then use the engineering design process to brainstorm inventions based on insects. Standards: SKL1.b, SKL2.a, SKL2.c

TURTLE TALK  
*Months offered: APRIL & MAY*
Let’s talk turtles and learn all about the needs of these unique vertebrates. We will explore how land tortoises and aquatic turtles are alike and different and participate in hands-on turtle stations. Students will observe live box turtles, aquatic sliders and a snapping turtle. Standards: SKL2.a, SKL2.b, SKL2.c
First Grade
Georgia Programs

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PLANETARIUM PROGRAMS

THE WEATHER  Months offered: SEPTEMBER, OCTOBER, MARCH, APRIL & MAY
Join us on a journey to connect children to the weather around them and encourage them to use their senses to observe weather. Learn basic cloud types, their association with specific weather conditions, and the concept of weather forecasting. The Weather introduces basic terms used to describe weather conditions, and the instruments used to study and measure weather. Children follow a drop of water through the entire water cycle. Standards: Standards: S1E1.b, S1E1.c, S1E1.d

DISCOVERY PROGRAMS

KIDPIX  Months offered: MARCH, APRIL & MAY
Get your creative juices flowing as we explore “KidPix” in our Mac computer lab classroom. Students will make art, math and science connections as they use the KidPix toolbox to draw lines, shapes, colors, and patterns as well as dipping into the paint bucket, paintbrush, stamps and eraser tools. Standards: Standards: S1L1.a, S1L1.c, Mathematics MGSE1.G.2

SUN AND SHADOWS  Months offered: SEPTEMBER & OCTOBER
Students will conduct investigations that help them discover how the Sun appears to move, how shadows change over time, and how the angle at which light shines changes the brightness and spread of the light. Standards: S1P1.a, S1P1.b, S1P1.c

MAGNETS & MOTIONS  Months offered: SEPTEMBER & OCTOBER
Students will predict, sort, test and classify objects as magnetic or non-magnetic. Using toys and fun hands-on activities, students will investigate properties of magnetism and demonstrate how the poles of magnets attract and repel. Standards: S1P2.a, S1P2.b

PLANTASTIC  Months offered: MARCH, APRIL & MAY
Students compare plants and people, identify the functions of plant parts, and assemble plant life cycle puzzles. They enjoy time-lapse videos of plants in motion and investigate methods of seed dispersal. As time permits, plants from different environments are compared and contrasted. Standards: S1L1.a, S1L1.c
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PLANETARIUM PROGRAMS

ONE WORLD, ONE SKY  Months offered: SEPTEMBER, OCTOBER, NOVEMBER, APRIL & MAY
Learn about the night sky with the cast from Sesame Street. Join Big Bird, Elmo and their friend from China, Hu Hu Zhu, on a journey to discover what it means to share one sky as we learn about the Big Dipper, the North Star, the Sun and the Moon. Standards: S2E1.a, S2E1.b

DISCOVERY PROGRAMS

ANIMALS WITH BACKBONES  Months offered: SEPTEMBER, OCTOBER & NOVEMBER
We will classify fish, amphibians, reptiles, birds, and mammals according to their physical characteristics. Students will observe live animals including salamanders, frogs, turtles, snakes, an alligator and an owl. Standards: S2L1.a

BRILLIANT BUTTERFLIES  Months offered: APRIL & MAY
Flit around with us as we learn fascinating facts about the butterfly’s body, life cycle and feeding habits. Students will observe both preserved and live butterfly specimens. Standards: S2L1.a, S2L1.d

PUSH ME, PULL ME  Months offered: SEPTEMBER, OCTOBER & NOVEMBER
Students will experiment with force and motion using toys including marble towers, gears, ramps and dominoes. They will collect, analyze, and interpret data from observations and measurements as they investigate motion, gravity and friction. Standards: S2P2.a, S2P2.b, S2P2.c

WHAT’S THE MATTER?  Months offered: APRIL & MAY
Students will investigate three states of matter: solid, liquid, and gas. They will observe, describe, and compare physical properties of solids and liquids. They will also explore mixtures and solutions. Standards: S2P1.a, S2P1.b, S2P1.c
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**PLANETARIUM PROGRAMS**

**HABITAT EARTH**  **Months offered: DECEMBER, JANUARY, FEBRUARY & MARCH**

Dive below the ocean’s surface and travel beneath the forest floor to explore how living organisms are interconnected to support life forms both large and small. From the tiniest microbe to the tallest tree, Habitat Earth utilizes stunning images to show students how the biological world is carefully intersected with human and ecological networks. Standards: 3.L.5A.1, 3.L5A.2, 3.L.5B.1, 3.L.5B.2

**WHO DISCOVERED AMERICA?**  **Months offered: DECEMBER, JANUARY, FEBRUARY & MARCH**

Students will explore celestial navigation techniques, such as using kamals (used by Arabic and North African sailors) and quadrants to measure the altitude angle of the North Star to determine latitude. We will learn how compasses and celestial events, such as a lunar eclipse, can be used to determine how far east of west one has traveled on Earth. We will uncover details related to Columbus’ voyage to North America and about other peoples who discovered America even before Columbus. Standards: Social Studies SS3H2.a, SS3H2.b

**DISCOVERY PROGRAMS**

**MARVELOUS MINERALS**  **Months offered: DECEMBER & JANUARY**

Working together in small groups, students handle mineral specimens such as malachite, amethyst, mica, pyrite and copper. They learn to identify common minerals on the basis of their properties using a field guide and minerals identification key. Standards: S3E1.a, S3E1.b, S3E1.c

**MERRY MEASURING**  **Months offered: DECEMBER & JANUARY**

Students use Earth materials to investigate volume and mass. They will engage in problem solving activities such as estimating, measuring and ordering the masses of different minerals. We will explore the difference between mass and weight as well as learn how and why their weight changes if we leave Earth. Standards: S3E1.b Mathematics MGSE3.MD.2

**MULTIPLICATION MADNESS**  **Months offered: FEBRUARY & MARCH**

Join us in our computer lab to dive into all things multiplication. This program introduces and extends students’ multiplication skills through building arrays, easy to use strategies and multiplication games. Finally, students will test their new multiplication knowledge on the computer with flash cards with a techno twist! Standards: Mathematics MGSE3.OA.1, MGSE3.OA.7
DISCOVERY PROGRAMS

PLANET EARTH ROCKS  Months offered: DECEMBER & JANUARY
Students will explore excellent specimens of igneous, sedimentary and metamorphic rocks. They will compare physical properties relating properties to formation processes as well as observe and classify fossils, sediments and products of earth resources. Standards: S3E1.a, S3E1.b, S3E1.c, S3E2.a, S3E2.b

STAYING ALIVE!  Months offered: FEBRURY & MARCH
What adaptations help animals to stay alive in their habitat? Students will answer this question as we observe live animals including an owl, alligator, turtle, frog and salamander and learn all about animal adaptations by participating in hands-on stations. Standards: SL3L1.b

ECOHIKE IN HITCHCOCK WOODS  Months offered: SEPTEMBER, OCTOBER, APRIL & MAY
This is a two-hour, two-mile guided hike through Hitchcock Woods. Native plants will be identified, evidence of animal life will be examined, and forest communities will be compared. Standards: S3L1.a, S3L1.b, S3L1.c
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Sound-sational | *Magic Treehouse: Space Mission*  
Kinesthetic Astronomy  
Lunar Design Challenge | *Magic Treehouse: Space Mission*  
Owls: Wise Guise  
Walk Across the Solar System |

**PLANETARIUM PROGRAMS**

**MAGIC TREEHOUSE: SPACE MISSION**  
Months offered: NOVEMBER, DECEMBER, MARCH & APRIL

Travel with brother-sister duo, Jack and Annie, in their Magic Tree House as they discover a note that asks them to answer six questions about space. With the help of an astronomer, the Internet, an astronaut, books and the writer of the mysterious note, we go on a wonderful journey of adventure and learning. This beautifully produced show is based on the beloved Magic Treehouse book series. Standards: S4E1.b, S4E1.c, S4E1.d

**TWO SMALL PIECES OF GLASS**  
Months offered: SEPTEMBER & OCTOBER

Join two young people at a star party as they observe planets and stars in a telescope. Learn how the telescope has changed from a modified spyglass using two small pieces of glass to the huge, space and land-based devices of today. Standards: S4E1.a

**DISCOVERY PROG RAMS**

**DO YOU SEE WHAT I SEE?**  
Months offered: SEPTEMBER & OCTOBER

Students will explore ways that light can be reflected, refracted, diffracted and absorbed by various objects. They will also investigate how the eye converts light into images. Standards: S4P1.a, S4P1.b, S4P1.c

**KINESTHETIC ASTRONOMY**  
Months offered: NOVEMBER & DECEMBER

Students get a feel for the scale of the universe as they sort celestial objects; then they model the Earth, Moon and Sun. They will discover why stars appear to move across the sky each day/night, why we see different stars during the year and how Earth’s tilt causes seasons. Standards: S4E1.a, S4E1.b, S4E1.c

**LUNAR DESIGN CHALLENGE**  
Months offered: NOVEMBER & DECEMBER

Students will design, build, and test a Lunar Buggy to transport astronauts and cargo on the Moon. They will collect and analyze data, take measurements, and refine their models using the Engineering Design Process. Standards: Mathematics MGSE4.MD.1, MGSE4.MD.2
DISCOVERY PROGRAMS

OWLS: WISE GUISE  Months offered: MARCH & APRIL
Silent flight, a curved beak and sharp talons are some of the owl’s guise that enables these birds to be successful predators. We will explore four owls native to our area, interact with live owls and dissect owl pellets. Standards: S4L1.a, S4L1.b

SOUND-SATIONAL  Months offered: SEPTEMBER & OCTOBER
Students will learn about sound waves and how loudness and pitch may be manipulated. They will use teamwork to construct their own musical instruments and play a song. Standards: S4P2.a

WALK ACROSS THE SOLAR SYSTEM  Months offered: MARCH & APRIL
Students learn about the planets and the size of the solar system as they create a model of the solar system using a scale of 1 inch = 100,00 miles. This requires walking outside for about a mile, so please wear appropriate shoes! Standards: S4E1.d
Fifth Grade
Georgia Programs

MONTHLY PROGRAM PAIRINGS

<table>
<thead>
<tr>
<th>DECEMBER &amp; JANUARY</th>
<th>FEBRUARY &amp; MARCH</th>
<th>SEPTEMBER, OCTOBER, APRIL &amp; MAY</th>
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<tbody>
<tr>
<td>*Defying Gravity</td>
<td>*Defying Gravity</td>
<td>Ecohike in Hitchcock Woods</td>
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<tr>
<td>Changes Matter</td>
<td>CSI: Solutions</td>
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<tr>
<td>Polygon Puzzle</td>
<td>Variable Ventures</td>
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<tr>
<td>Vertebrate Taxonomy</td>
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</tr>
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</table>

PLANETARIUM PROGRAMS

DEFYING GRAVITY: IT IS ROCKET SCIENCE  
Months offered: DECEMBER, JANUARY, FEBRUARY & MARCH
Join host Apollo Aurora and her science reporters as they explore the science behind rocket power, gravity on other planets, and even monstrous black holes! Robot experts Apple I-6-8-6 and EGR-1 will also lend a few circuits to explain the force that keeps us humans all grounded. Well, some of the time! Standards: Social Studies SS5H8.d

DISCOVERY PROGRAMS

CHANGES MATTER  
Months offered: DECEMBER & JANUARY
Students explore physical and chemical properties of matter. They compare physical and chemical changes and experience reactivity through experiments and “igniting” demonstrations! Standards: S5P1.a, S5P1.b, S5P1.c

CSI: SOLUTIONS  
Months offered: FEBRUARY & MARCH
Scotty’s dog is missing! Students use chromatography and sifting to separate mixtures; use indicators to make solutions and identify a mystery substance; and examine hair and fiber samples with microscopes in a simulated crime scene investigation. Standards: S5P1.a, S5P1.c

POLYGON PUZZLE  
Month offered: DECEMBER & JANUARY
Students will explore properties of Greek roots of polygons and polyhedrons. Using dynamic computer software called Geometer’s Sketch Pad they will be challenged to solve a puzzle as they construct acute, obtuse, right, isosceles, equilateral, and scalene triangles. Standards: Mathematics MGSE5.G.3, MGSE5.G.4

VARIABLE VENTURES  
_months offered: FEBRUARY & MARCH
Students identify different types of mixtures and work in collaborative teams to make various solutions. They manipulate variables to change the rate of dissolving. Standards: S5P1.a, S5P1.b

VERTEBRATE TAXONOMY  
_months offered: DECEMBER & JANUARY
Students will participate in hands-on taxonomy activities as well as take a look inside the 5 groups of vertebrates using x-ray images. They will interact and observe live animals including salamanders, frogs/toads, turtles, snakes, an alligator, and an owl. Standards: S5L1.a

OUTDOOR EXTENDED HOUR PROGRAM

ECOHIKE IN HITCHCOCK WOODS  
Months offered: SEPTEMBER, OCTOBER, APRIL & MAY
This is a two-hour, two-mile guided hike through Hitchcock Woods. Native plants will be identified, evidence of animal life will be examined, and forest communities will be compared. Standards: S5L1.a, S5L1.b
Discovery and Planetarium Programs are **NOT** offered every month. Please see the calendar below along with program descriptions for **MONTHLY** offerings. When planning your visit, please select programs offered in the **same month**.

### 2019-2020 Georgia Upper Level Student Programs Calendar

<table>
<thead>
<tr>
<th>Month</th>
<th>Sixth Grade</th>
<th>Seventh Grade</th>
<th>Eighth Grade</th>
<th>High School</th>
</tr>
</thead>
</table>
| SEPTEMBER | *Sunstruck*  
Energy Transformations  
Rockin' & Rollin'| *Seven Wonders*  
Polygon Puzzle  
Ravenous Raptors | *Cosmic Colors*  
Center of the Atom  
Meet the Elements | *Sunstruck*  
Center of the Atom  
Probing Periodic Table |
| OKTOBER  | *Sunstruck*  
Energy Transformations  
Rockin' & Rollin'| *Seven Wonders*  
Radioecology  
Ravenous Raptors | *Cosmic Colors*  
Center of the Atom  
Meet the Elements | *Sunstruck*  
Center of the Atom  
Probing Periodic Table |
| NOVEMBER | *Sunstruck*  
Kinesthetic Astronomy  
Lunar Design Challenge  
Under the Sea | **Ecohike in Hitchcock Woods** (2 hour guided hike) | *Cosmic Colors*  
Center of the Atom  
Meet the Elements | *Sunstruck*  
Center of the Atom  
Probing Periodic Table |
| DECEMBER | *Sunstruck*  
Kinesthetic Astronomy  
Lunar Design Challenge  
Under the Sea | **Ecohike in Hitchcock Woods** (2 hour guided hike) | **Ecohike in Hitchcock Woods** (2 hour guided hike) | **Ecohike in Hitchcock Woods** (2 hour guided hike) |
| JANUARY  | *Grossology and You*  
Polygon Puzzle  
Ravenous Raptors | *Cosmic Colors*  
Are You Dense?  
Force & Motion  
Hiker | *Sunstruck*  
Center of the Atom  
Lunar Design Challenge | *Sunstruck*  
Center of the Atom  
Changes Matter |
| FEBRUARY | *Grossology and You*  
Polygon Puzzle  
Ravenous Raptors | *Cosmic Colors*  
Are You Dense?  
Force & Motion  
Hiker | *Sunstruck*  
Center of the Atom  
Changes Matter | *Sunstruck*  
Center of the Atom  
Changes Matter |
| MARCH    | **Ecohike in Hitchcock Woods** (2 hour guided hike) | *Cosmic Colors*  
Are You Dense?  
Force & Motion  
Hiker | **Ecohike in Hitchcock Woods** (2 hour guided hike) | **Ecohike in Hitchcock Woods** (2 hour guided hike) |
| APRIL    | **Ecohike in Hitchcock Woods** (2 hour guided hike) | **Ecohike in Hitchcock Woods** (2 hour guided hike) | **Ecohike in Hitchcock Woods** (2 hour guided hike) | **Ecohike in Hitchcock Woods** (2 hour guided hike) |
| MAY      | **Ecohike in Hitchcock Woods** (2 hour guided hike) | **Ecohike in Hitchcock Woods** (2 hour guided hike) | **Ecohike in Hitchcock Woods** (2 hour guided hike) | **Ecohike in Hitchcock Woods** (2 hour guided hike) |

* Indicates a Planetarium Program (you may only select **ONE** planetarium show per visit)

** Indicates an Ecohike (these hikes are a stand alone program offered off-site at Hitchcock Woods)
Sixth Grade Georgia Programs

MONTHLY PROGRAM PAIRINGS

<table>
<thead>
<tr>
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<th>NOVEMBER &amp; DECEMBER</th>
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<tr>
<td>Rockin’ &amp; Rollin’</td>
<td>Lunar Design Challenge</td>
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<tr>
<td></td>
<td>Under the Sea</td>
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</table>

PLANETARIAUM PROGRAMS

SUNSTRUCK  Months offered: SEPTEMBER, OCTOBER, NOVEMBER & DECEMBER
Discover the wonders of our sun! Its incredible energy supports life on Earth, but solar storms can threaten our technology and way of life. Discover connections between sunspots, magnetic fields, aurora, and power failures. Travel to the distant future to discover our sun’s connection to the cosmic cycle of life and death. Standards: S6E1.c, S6E2.a, S6E6.c

DISCOVERY PROGRAMS

ENERGY TRANSFORMATIONS  Months offered: SEPTEMBER & OCTOBER
Students will build and power circuits using different energy sources such as chemical, mechanical and thermal. Explore the benefits of solar panels and learn how clean energy is the way of the future! Program Sponsored by: SCANA
Standards: S6E6.a

KINESTHETIC ASTRONOMY  Months offered: NOVEMBER & DECEMBER
Students get a feel for the scale of the universe as they sort celestial objects; then they model the Earth, Moon and Sun. They will discover why stars appear to move across the sky each day/night, why we see different stars during the year and how Earth's tilt causes seasons. Standards: S6E1.a, S6E1.b, S6E1.c

LUNAR DESIGN CHALLENGE  Months offered: NOVEMBER & DECEMBER
Students will design, build, and test a Lunar Buggy to transport astronauts and cargo on the Moon. They will collect and analyze data, take measurements, and refine their models using the Engineering Design Process.
Standards: MGSE.6.RP.3d

ROCKIN’ & ROLLIN’  Months offered: SEPTEMBER & OCTOBER
Students observe excellent specimens of igneous, sedimentary and metamorphic rocks. They compare physical properties, relate properties to formation processes, and examine sand derived from various rocks. They also classify fossils and products of Earth resources. Standards: S6E5.a, S6E5.c, S6E5.d, S6E5.e, S6E5.f

UNDER THE SEA  Months offered: NOVEMBER & DECEMBER
In this deep-sea mapping expedition, students use depth probes, look for patterns, make inferences and map the ocean floor using a large 3D Landforms Puzzle. They compare continental landforms with oceanic landforms, discuss constructive and destructive processes, and discover connections between landforms and plate tectonics. Standards: S6E3.a, S6E3.c

Ruth Patrick Science Education Center – Student Programs 2019-2020
SEPTEMBER | OCTOBER | JANUARY & FEBRUARY | NOVEMBER, MARCH APRIL & MAY
---|---|---|---
*Seven Wonders Polygon Puzzle Ravenous Raptors | *Seven Wonders Radioecology Ravenous Raptors | *Grossology and You Polygon Puzzle Ravenous Raptors | Ecohike in Hitchcock Woods

**PLANETARIUM PROGRAMS**

**GROSSOLOGY AND YOU**  Months offered: JANUARY & FEBRUARY
Join Noreen Neuron, host of the “Personal Universe” game show, as she leads us through a competition to decide which body system is the best and brightest. Will it be Scabby (the immune system), Boogie (the respiratory system) or Flatus (the digestive system)? Standards: S7L2.c

**SEVEN WONDERS**  Months offered: SEPTEMBER & OCTOBER
Turn back the pages of time and witness the ancient wonders of the world, as they appeared thousands of years ago. Explore the Great Pyramid, stand in the shadow of the towering Colossus and experience the rest of the world’s Seven Wonders. We will investigate the theories of how these wonders were created, and get a glimpse of some of the universe's greatest wonders. Standards: Social Studies SS7G1, SS7G5

**DISCOVERY PROGRAMS**

**POLYGON PUZZLE**  Months offered: SEPTEMBER, JANUARY & FEBRUARY
Students will explore properties of Greek roots of polygons and polyhedrons. Using dynamic computer software called Geometer’s Sketch Pad they will be challenged to solve a puzzle as they construct acute, obtuse, right, isosceles, equilateral, and scalene triangles. Standards: Mathematics MGSE.7.G.2

**RADIOECOLOGY**  Month offered: OCTOBER
Learn what happens when radionuclides and ecosystems meet with the Savannah River Ecology Laboratory scientists. The SREL has the only radioecology undergraduate education program in the world. Challenge the myths and learn the facts about radioecology from research conducted at the SRS in Aiken, South Carolina, the Chernobyl Exclusion Zone in Russia, and the Fukushima Daiichi accident in Japan. Standards: S7L4.a, S7L4.b, S7L4.c, S7L4.d

**RAVENOUS RAPTORS**  Months offered: SEPTEMBER, OCTOBER, JANUARY & FEBRUARY
What is a raptor? How is an osprey’s talon different from an owl’s? Students will take an up-close look at birds of prey and examine their role in the food chain. Using field guides and wing/talon specimens we will compare and contrast physical characteristics, adaptations and habitats of these predators. Standards: S7L4.a, S7L4.b, S7L4.c, S7L4.d
OUTDOOR EXTENDED HOUR PROGRAM

ECOHIKE IN HITCHCOCK WOODS  Months offered: NOVEMBER, MARCH, APRIL & MAY

This is a two-hour, two-mile guided hike through Hitchcock Woods. Native plants will be identified, evidence of animal life will be examined, and forest communities will be compared. Standards: S7L4.a, S7L4.b, S7L4.c, S7L4.d
8th Grade
Georgia Programs

MONTHLY PROGRAM PAIRINGS

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<td>Center of the Atom</td>
<td>Are You Dense?</td>
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<tr>
<td>Meet the Elements</td>
<td>Force &amp; Motion</td>
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<td>Hiker</td>
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</table>

PLANETARIUM PROGRAMS

COSMIC COLORS

Months offered: OCTOBER, NOVEMBER, FEBRUARY & MARCH

Cosmic Colors will take you on a wondrous journey across the electromagnetic spectrum. Discover the many reasons for color – like why the sky is blue and why Mars is red. Take a tour within a plant leaf and journey inside the human eye. Investigate x-rays at your doctor’s office and at a monstrous black hole. Get ready for an amazing adventure under a rainbow of cosmic light! Standards: S8P4.a, S8P4.b, S8P4.c, S8P4.d, S8P4.e, S8P4.f, S8P4.g

DISCOVERY PROGRAMS

ARE YOU DENSE?

Months offered: FEBRUARY & MARCH

Students explore density using Earth materials including minerals, water, sand, and iron filings. They will take measurements, collect data, plot coordinates, and interpret graphs as they analyze the mathematical relationship between mass and volume. Standards: MGSE8.F.4, MGSE8.F.5

CENTER OF THE ATOM

Months offered: OCTOBER & NOVEMBER

Students explore atomic structure using a series of hands-on activities which concludes with the discovery of the uses of an atom they create using the Interactive Nucleus display and the Living Periodic Table. Standards: S8P1.e

Hiker

Months offered: FEBRUARY & MARCH

This interactive computer program explores graphing concepts by tracking students’ movements. Students enjoy the challenge and fun of moving to create specific line graphs. Standards: S8P3.a

FORCE & MOTION

Months offered: FEBRUARY & MARCH

Students will conduct investigations to distinguish between force and work, and mass and weight. They will demonstrate how simple machines such as levers, pulleys, and inclined planes reduce the amount of force needed to do work. Standards: S8P3.a, S8P3.b, S8P3.c

MEET THE ELEMENTS

Month offered: OCTOBER & NOVEMBER

Students “meet the elements” in a fun music video; then work together to classify materials as elements, compounds and mixtures. They will build atomic models and discover why compounds are either ionic or covalent. Standards: S8P1.a, S8P1.b, S8P1.e
### Monthly Program Pairings

<table>
<thead>
<tr>
<th>OCTOBER</th>
<th>NOVEMBER</th>
<th>JANUARY</th>
<th>FEBRUARY</th>
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<td>*Sunstruck Center of the Atom Lunar Design Challenge</td>
<td>*Sunstruck Center of the Atom Changes Matter</td>
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### PLANETARIUM PROGRAMS

**SUNSTRUCK**  
**Months offered:** OCTOBER, NOVEMBER, JANUARY & FEBRUARY  
Discover the wonders of our sun! Its incredible energy supports life on Earth, but solar storms can threaten our technology and way of life. Discover connections between sunspots, magnetic fields, aurora, and power failures. Travel to the distant future to discover our sun’s connection to the cosmic cycle of life and death. Standards: SES1

### DISCOVERY PROGRAMS

**CENTER OF THE ATOM**  
**Months offered:** OCTOBER, NOVEMBER, JANUARY & FEBRUARY  
Students explore atomic structure using a series of hands-on activities which concludes with the discovery of the uses of an atom they create using the Interactive Nucleus display and the Living Periodic Table. Standards: SC1, SC3

**CHANGES MATTER**  
**Month offered:** FEBRUARY  
Students explore physical and chemical properties of matter. They compare physical and chemical changes and experience reactivity through experiments and an “igniting” demonstration! Standards: SC3

**LUNAR DESIGN CHALLENGE**  
**Month offered:** JANUARY  
Students will design, build, and test a Lunar Buggy to transport astronauts and cargo on the Moon. They will collect and analyze data, take measurements, and refine their models using the Engineering Design Process. Standards: SP2

**RADIOECOLOGY**  
**Month offered:** OCTOBER  
Learn what happens when radionuclides and ecosystems meet with the Savannah River Ecology Laboratory scientists. The SREL has the only radioecology undergraduate education program in the world. Challenge the myths and learn the facts about radioecology from research conducted at the SRS in Aiken, South Carolina, the Chernobyl Exclusion Zone in Russia, and the Fukushima Daiichi accident in Japan. Standards: SB5, SEV1

**PROBING THE PERIODIC TABLE**  
**Month offered:** OCTOBER & NOVEMBER  
This program demystifies the periodic table and makes learning about atoms fun! Students grasp the organization of the periodic table as they construct a Periodic Table of Foods. Then, they build atomic models and use them to find patterns in the structure and behavior of elements. Standards: SC1, SC3
ECOHIKE IN HITCHCOCK WOODS  

Months offered: SEPTEMBER, MARCH, APRIL & MAY

This is a two-hour, two-mile guided hike through Hitchcock Woods. Native plants will be identified, evidence of animal life will be examined, and forest communities will be compared. Standards: SB5, SEV1
Educator Resources

Traveling Science and Mathematics Demonstrations Program

FREE Teacher Resources and Visiting Scientists Available

The Traveling Science and Mathematics Demonstrations Program has over 300 science and math kits available for use in the classroom. Supplement your curriculum with nationally recognized and state adopted exemplary materials. Kits have been correlated to SC state standards. Many kits contain children’s literature so that you can integrate your science and language arts lessons.

In addition to these resources, you can request a visiting Scientist with a Traveling Resources and Neat Demonstrations (STRAND) volunteer for classroom presentations.

For more information please visit [http://rpsec.usca.edu/travelingscience/](http://rpsec.usca.edu/travelingscience/) or call us at 803-641-3683.

SC Regional Future City Competition

Future City is a cross-curricular program that lets students in the 6th, 7th, and 8th grades do the things engineers do: identify problems, brainstorm ideas, design solutions, test and retest, build and then share the results. Future City is a program of DiscoverE.

Visit [http://futurecity.org](http://futurecity.org) for more information.

34th Annual Science Education Enrichment Day (SEED)

Mark your calendars for the CSRA's premier STEM festival. Join us on October 5th from 10am-3pm and celebrate innovations in science, technology, engineering, and mathematics (STEM). Visit the Ruth Patrick Science Center and other sites on the USC Aiken campus as student groups, regional corporations, museums, educators, and national labs join forces to present hundreds of activities for people of all ages.

Organizers hope to increase awareness of the critical role science and other STEM fields play in our everyday existence.

Visit [http://rpsec.usca.edu/SEED](http://rpsec.usca.edu/SEED) for more information.
Providing professional learning activities for teachers is a primary method for reaching our goal of "Infusing a Love for Science, Technology, Engineering and Mathematics." Highly qualified teachers are the primary way to impact our students. Professional Learning at the RPSEC offers a variety of activities during the summer and the academic year.

Professional Learning opportunities focus on a content area but include all STEM areas.


**Traveling Interdisciplinary Literacy Trunks (TILTS)**

Traveling Interdisciplinary Literacy Trunks (TILTs) are teacher-designed, interdisciplinary units of study that are aligned with academic standards from multiple content areas with an emphasis on writing across the curriculum.

TILT unit plans are now available, FREE of charge, to ALL teachers.

Each completed TILT includes the following: a unit plan, children’s literature, class sets of novels, science equipment, math manipulatives and a teacher resource list. Reserve yours today by e-mailing the RPSEC at travelingscience@usca.edu or calling 803-641-3638.

Visit [http://rpsec.usca.edu/CE-MIST/Trunks/CE-MIST_TILT.html](http://rpsec.usca.edu/CE-MIST/Trunks/CE-MIST_TILT.html) for more information.

Funding for our TILTs has been provided by the Center of Excellence in Middle-level, Interdisciplinary Strategies for Teaching (CE-MIST), the Aiken Writing Project (AWP) and the Sunrise Rotary Club of Aiken.