Science Technology Enrichment Program (STEP)
2010-2011 PROGRAM DESCRIPTIONS

The Science and Technology Enrichment Program (STEP) is a cooperative effort between Savannah River Nuclear Solutions, Silver Bluff Audubon Center, and the Ruth Patrick Science Education Center. Two field trip locations for STEP include the Savannah River Site and the Silver Bluff Audubon Center. At each location, STEP students utilize classroom and outdoor laboratories to conduct scientific investigations on topics such as water ecology, soils, wildlife, forestry, archaeology, navigation and more. For more information please visit the STEP website at: http://rpsec.usca.edu/step/.

NOTE: Please select two (2) one hour programs offered in the same month, or one 2.5 hour program.

Aquatic Ecosystem/Pond (2.5 hours)
Students will study freshwater ecology using methods established by Dr. Ruth Patrick, a pioneer in the field of limnology.

Pond I- This extended lesson focuses on investigating and comparing the different types of organisms that can be found in aquatic and terrestrial environments. Students will use field guides, magnifiers, and field microscopes to identify and classify specimens found in and near a pond. Recommended SC 5th grade: 5-1.6, 5-2.2 Recommended GA 4th grade: S4CS1-a; S4CS8-a; S4L2-a

Pond II- Using tools for inquiry such as thermometers, pH meters, and graduated cylinders, the students will collect data, take measurements, and perform dissolved oxygen and turbidity tests to evaluate how abiotic and biotic factors influence the quality of life in an aquatic ecosystem. Recommended SC 7th grade: 7-4.2, 7-5.6 Recommended GA 7th grade: S7CS1-a; S7CS2-b; S7CS4-b; S7CS7-d; S7CS9-b; S7L4-c

Archaeology (1 hour)
This is a hands-on program in which students experience the excitement of being an archaeologist. The program will introduce students to archaeological methods and goals, providing them with a simulated dig experience. They will learn how to use archaeological tools, how to map sites, and how to put archaeological finds into historical context. Recommended for SC and GA grades 3-8 and high school; addresses social studies standards.

Forestry (1 hour)
Students will work on collaborative teams, applying skills from careers in wildlife biology, forestry, botany, and ecology to debate and determine the best use of an area of land. They will use measuring devices to measure the circumference of trees on the site, calculate diameter from circumference and learn why foresters make these measurements. Recommended SC 7th grade: 7-1.2, 7-4.3 Recommended SC 8th grade: 8-1.3, 8-2.7 Recommended GA 7th grade: S7CS4-b; S7CS5-a; S7CS8-d

Insects (2.5 hours)
Students will study the different kinds of insects that inhabit the surrounding environment.

Insects I- Young students will collect samples of real insects, compare and contrast them, and discover similarities within the community. Recommended SC kindergarten: K-1.1, K-1.2, K-2.4 Recommended GA kindergarten: SKCS1-a, b; SKCS4-b; SKCS6-a, b; SKL2-a

Insects II- This lesson will focus on the metamorphosis of the butterfly and how the butterfly’s habitat meets its unique needs throughout its life cycle. Recommended SC 2nd grade: 2-1.1, 2-2.4, 2-2.5 Recommended GA 2nd grade: S2CS1-a; S2CS3-a; S2CS4-d; S2CS6-b; S2L1-a

Navigation (1 hour)
The navigation lesson reinforces math, problem solving, and teamwork skills. We will start indoors with an introduction to compass skills, learn how a compass is made, and see how it functions. Students will then have a chance to put these skills to work in small groups as they navigate their way through an outdoor orienteering course.

Navigation I- Students will investigate how a compass functions as a directional tool, illustrating cardinal directions. Recommended SC 1st grade: 1-4.5 Recommended GA 1st grade: M1P4-a; M1G3; Map and Globe Skills 1-2

Navigation II- Students will work in collaborative groups to find various locations by utilizing a compass. Recommended SC 4th grade: 4-4.8, 4-5.2 Recommended GA 4th grade: M4M2-b; M4P4-a; Map and Globe Skills 1-2

Navigation III- Students use a compass and teamwork to navigate their way out of a heavily wooded area and through an obstacle course. Recommended SC 6th grade: 6-5.7 Recommended GA 6th grade: M6G1-b; M6M2-b; M6P4-a, Map and Globe Skills 1-2
Plants (2.5 hours)
Students will identify the physical and behavioral characteristics of plants in their environment.

Plants I- This lesson will focus on classifying plants during different stages of their lifecycle, as well as identifying plant parts.
Recommended SC 1st grade: 1-1.1, 1-1.3, 1-2.2, 1-2.4
Recommended GA 1st grade: S1CS1-a; S1CS4-a; S1CS7-a, b; S1L1
Recommended GA 2nd grade: S2CS1-a; S2CS4-d; S2CS7-a, b; S2L1 c

Plants II- Students will investigate characteristics of plants and how they respond to the environment.
Recommended SC 3rd grade: 3-1.2, 3-2.4
Recommended GA 3rd grade: S3CS1-a, b; S3SC4-a; S3CS8-a, b; S3L1-d

Plants III- This extended lesson is an in-depth study of the plant kingdom. Students will collect, identify, and classify plants by structures and processes.
Recommended SC 6th grade: 6-1.2, 6-1.3, 6-2.3, 6-2.5
Recommended GA 5th grade: S5CS1-a; S5CS8-a, b; S5L1-b

Soil (1 hour)
Students will collect and analyze data using different layers of soil found in a soil pit.

Soil I- This lesson focuses on the physical properties of soil including color, texture, and its capacity to nourish growing plants.
Recommended SC 1st grade: 1-1.1, 1-1.3, 1-4.1, 1-4.3, 1-4.6

Soil II- Students collect and classify soil by particle size, composition, and water-holding capacity. They also use an auger to take soil samples and investigate the biodiversity of small organisms found in soil.
Recommended SC 3rd grade: 3-1.1, 3-3
Recommended GA 3rd grade: S3CS8-a, b; S3E1-c

Soil III- This lesson emphasizes the classification of soil based on soil quality. Students will use scientific equipment and observation skills to analyze temperature, pH levels, nutrients, and infiltration rates. They will also conduct a depth analysis to create a soil profile.
Recommended SC 7th grade: 7-1.1, 7-1.4, 7-1.6, 7-4.4
Recommended GA 6th grade: S6CS2-a, d; S6CS4-c, S6CS9-a; S6E5-h

Planning Your Visit
• Please dress appropriately for the weather. All field trip programs take place rain or shine.
• Please wear long pants and closed toe shoes.
• Participants should bring bag lunches and drinks.
• Adult chaperones are free and welcome. SRS requires a minimum of 1 adult chaperone per 7 children.
• All visitors to SRS, including bus drivers, chaperones, students, and teachers, must submit paperwork including Social Security numbers at least 2 weeks before your visit to be badged.
• Visits to SRS include a “Homeland Security 101” orientation. Please plan to arrive at 9:00 AM.

Wildlife (2.5 hours)
Students will follow clues to identify organisms that thrive within the local environment. They will analyze physical and behavioral adaptations that allow the organism to survive and continue the flow of energy through their ecosystem.

Wildlife I- Students will classify different types of organisms based on their physical characteristics, including fur and feathers.
Recommended SC 2nd grade: 2-1, 2-2
Recommended GA 1st grade: S1CS1; S1CS5; S1CS6; S1L1

Wildlife II- This lesson focuses on organisms grouped according to their interaction and relationship with the environment. The concept of food webs is introduced in this unit.
Recommended SC 4th grade: 4-1.1, 4-1.4, 4-2.1, 4.2.2
Recommended GA 5th grade: S5CS1-a; S5CS8-a, b; S5L1-a

Wildlife III- Students will identify limiting factors that affect animal populations in an ecosystem.
Recommended SC 3rd grade: 3-1.4
Recommended SC 5th grade: 5-1.6
Recommended GA 4th grade: S4CS1-a; S4CS8-a, b; S4L1-c, d

Reservation Requests
Reservation requests must be received by 5:00 PM on Friday, June 18, 2010. Due to the anticipated volume of program requests, it is highly unlikely that late requests will be filled. Request forms may be mailed to the RPSEC, 471 University Parkway, Box 3, Aiken, SC 29801 or faxed to (803) 641-3615. You may also register for programs online at http://rpsec.usca.edu/student/. Reservation requests received after the deadline will be placed on a waiting list. No reservations will be made by telephone.

Please indicate if you need any special services, assistance, or accommodations to participate in our programs by contacting Deborah McMurtrie in advance at DeborahMc@usca.edu or (803) 641-2834.