



Program Guide: K-12 Field Trips

Dear Educator,

Thank you for considering the Port Royal Sound Foundation (PRSF) Maritime Center as a learning opportunity for your students! The Maritime Center is centrally located in Beaufort County on the banks of the Chechessee River. No matter where you travel in our county you're most likely going to cross the waters of the Port Royal Sound area. These waters are some of the most pristine in the country and here at the Port Royal Sound Foundation we want to keep them that way. We believe raising awareness and educating residents and visitors alike about the uniqueness of our special ecosystem is the first step.

At the Maritime Center you can **experience** dynamic exhibits and the rich variety of life found in the Port Royal Sound Area – see what a 10 foot tiger shark looks like! **Discover** our amazing local marine life in a 3,000 gallon aquarium and the educational viewing tanks. **Enjoy** the water by boat, kayak, canoe and more. And, **connect** to the stories and rich history that make the Sound so unique.

School field trips are an integral part of fulfilling the PRSF's mission to advance the awareness of Port Royal Sound and its contributions. Through hands-on experiments and discovery, students will not only see the life of our amazing environment but experience it first-hand. The PRSF education staff has developed grade specific lesson plans for Kindergarten through 8th grade classes that align with SC State Standards. We offer a variety of activities which illustrate the lesson theme along with an interactive tour of the Maritime Center and the Port Royal Sound's salt marsh that surrounds it. Each field trip will begin with a short, grade specific introduction highlighting the lesson theme and activities/information that will be addressed during the day. Tours of the Center and the marsh will correlate to the lesson plan.

NOTE: If your class is studying a particular topic that you would like to incorporate into the field trip experience, please let us know and we will happy to work with you.

The following sections contain descriptions of the individual grade themes including activities you can add to your trip to enhance your experience. You will also find a list of things to review with your class and how to prepare for your field trip at the Maritime Center.

Please let us know if you have any questions. We wish for this to be an exciting and successful experience for students and teachers!

Best regards,
Chris Kehrer
Naturalist/Education Coordinator
843-645-7774, ext. 203

Kindergarten: PLANT OR ANIMAL?

Students learn the differences between animals and plants in the marine ecosystem by learning body parts/plants and the fundamentals of life in the marine ecosystem. Adult and juvenile body plans are assessed and taught through visual and interactive activities.

❖ Activities:

- Is it a plant or an animal? – art activities that help show kids a visual of aquatic creatures and an explanation as to why they are animals/plants
- Are You Me? – students match adult and their babies
- Reading time – we will read a children’s story that pertains to issues in aquatic ecosystems
- Fish Parts Puzzle – an activity where the kids piece together a large scale puzzle that will help Identify certain parts on an animal and what its function is.



- ### ❖ Vocabulary:
- animal, breathe, ecosystem, feel, fin, fish, gills, hear, lungs, mammal, ocean, plant, reptile, scales, sense, shelter, skin, sound

1ST grade: PLANTS AND RECYCLING

The maritime plants that surround the Port Royal Sound are vital for its survival! We will discuss plants and how they are saltwater tolerant and discuss different adaptations. Also we will discuss the role they play in the marine ecosystem as buffers and fertilizers. Recycling plays a huge role in keeping the Port Royal Sound and its surrounding bodies of water healthy. Students will discover ways they can contribute.

❖ Activities:

- Why are plants, plants? – pictures with descriptions of plant parts
- Recycling treasure hunt – students go on a walk around the center using a map to find trash and bring it back and recycle it.
- Turtle wheel of trouble – students create a turtle wheel that they can take home and discuss about what is threatening sea turtles and how can everyone pitch in to help

- ### ❖ Vocabulary:
- climate, ecosystem, flower, freshwater, habitat, leaf, ocean, plant, root, saltwater, seed, shrub, stem

2ND grade: ANIMAL CLASSIFICATION

The ability to classify animals allows us to properly take care and assess animals when confronted by them. The marine ecosystem is so diverse that we will discuss super fauna and common critters that anyone could encounter on a day at the beach. Form and function will be emphasized to help students better understand why animals function the way they do.

❖ **Activities:**

- Build a Horseshoe crab – students learn about what makes up a horseshoe crab while making a souvenir to take home
- Shell sort – students sort shells and learn of the various animals that inhabit each shell and the differences between each
- Fish Fashion – students will learn about different animal appendages and their functions and then play a trivia game that makes them recollect previously taught knowledge

- ❖ **Vocabulary:** adapt, animal, bird, characteristics, differences, fish, heredity, inherent, insect, mammal, offspring, parent, population, reptile, reproduction, survival, trait



3rd grade: LIFE CYCLES AND FOOD WEBS

To understand any ecosystem, the food web and life cycles are some of the most valued information. We will discuss the complex food web that our marine ecosystem presents and discuss the importance of key stone animals. We will also discuss the unique life cycles that many marine organisms go through as they make their way up the food chain.

❖ **Activities:**

- Where do I live? – students match animals found in the Port Royal Sound with their habitat
- Growth and Development – art activity will show students the different life cycles that a blue crab goes through and where each stage takes place
- Student food chain – students will be assigned a different animal and the group will organize themselves into 'who preys on who.' An explanation and reorganization will correct any mistakes and show why the food chain is the way it is and how important key species are
- Marsh Munchers – allows students to identify components of a food web in a salt marsh and identify interconnectedness

- ❖ **Vocabulary:** adult, carnivore, consumer, decomposer, egg, energy pyramid, food chain, food web, grow, herbivore, life cycle, metamorphosis, omnivore, organisms, predator, prey, producer, scavenger



4th grade: SUN, MOON AND TIDES

The Sun and Moon and their gravitational pulls along with our large continental shelf is what creates the incredible tidal range in our area. Tides create one of the most extreme living environments where few animals can survive. We will talk about how tides develop, what lives in the tidal ranges, and special adaptations that allow those organisms to survive.



❖ Activities:

- Gravity and Tides – students learn about the tides by acting them out
- Turtle hurdles – students play a game that shows the trials that sea turtles have to go through to survive.
- Tides and the animals that rely on them – We will discuss how animals rely on the tide for reproduction (horseshoe crabs), feeding (dolphin strand feeding), etc...

- ### ❖ Vocabulary:
- crescent moon, full moon, gibbous moon, gravity, king tide, moon, neap tide, new moon, orbit, spring tide, sun, tides, waning moon, waxing moon,

*A new 'Moon and Tides' exhibit is being installed at the Maritime Center this spring!

5th grade: ECOSYSTEM

Defining an ecosystem is very complex with many variables affecting its health. We will discuss the different parts of the Port Royal Sound and discuss what factors affect the Sound's ecosystem including barrier islands, no freshwater input, and turbidity, just to name a few.



❖ Activities:

- Salt marsh players – demonstrate how various salt marsh plants and animals adapt to environmental conditions
- Silt: A dirty word – this activity teaches students how silt and sand effect the ecosystem
- Migration headache – demonstrates how important a pristine environment is to specific species

❖ Optional Experiences:

- Eco-boat tours aboard 25-foot vessel Spartina (additional cost; see description in next section for details)
- Phytoplankton Study (no additional cost; see description in next section for details)

- ### ❖ Vocabulary:
- adaptation, barrier islands, bacteria, community, detritus, ecosystem, estuary, nutrients, plankton, pollution, population, sediment, sound, turbidity

6th grade: ADVANCED ANIMAL CLASSIFICATION

We will discuss the lesser known critters found in the Port Royal Sound and what huge impacts they have on our eco system. Form and Function will be explained in detail to help students differentiate families and species.

❖ Activities:

- Specimen Jar classification – following an introduction to different categories – vertebrate/invertebrate, crustaceans, and fish - students will sort specimen jars into correct categories:
- Form and Function – PowerPoint followed by advanced ‘fashion a fish’ where students create their own fish and offer an explanation
- Be shore of your shorebirds – using a shorebird dichotomous key, students will break into groups to figure out each bird species
- Dolphin model and echolocation game – shows students adaptations developed by a top predator and how effective they are.



❖ Optional Experiences:

- Eco-boat tours aboard 25-foot vessel Spartina (additional cost; see description in next section for details)
- Phytoplankton Study (no additional cost; see description in next section for details)

- ❖ **Vocabulary:** adaptation, arthropod, binomial, camouflage, classification, dichotomous key, genus, invertebrate, kingdom, migration, mimicry, nomenclature, scavenger, species, taxonomy, vertebrate



7th grade: WATER! BIOTIC AND ABIOTIC FACTORS

With the Port Royal Sound being a purely salt water inlet, few know the detrimental impact that freshwater input has on the estuarine ecosystem. Students will learn the major impacts along with ways that anyone can help with water runoff.

❖ **Activities:**

- Water testing – a test kit activity that shows what you can find in the environment such as pollutants and common elements
- What is in the water? – students will classify and categorize different types of pollutants and graph the abundance and effects
- Advanced Enviroscope – interactive activity buffering, point and nonpoint pollution
- Discussion on the differences between the Port Royal Sound, ACE Basin, and other surrounding land management areas.

❖ **Optional Experiences:**

- Eco-boat tours aboard 25-foot vessel Spartina (additional cost; see description in next section for details)
- Phytoplankton Study (no additional cost; see description in next section for details)

❖ **Vocabulary:** abiotic, biome, biotic, ecosystem, estuary, eukaryote, consumer, decomposer, food web, niche, producer, prokaryote

8th grade: PORT ROYAL SOUND GEOGRAPHY

One aspect that makes the Port Royal Sound so unique is its geography. With no freshwater inlet this tidal inlet is greatly affected by water runoff systems, geographical depressions, and man-made infrastructure. Students will learn how and why geography is so important to the health of the sound.

❖ **Activities**

- SC Landforms – students sequence the SC landform regions from mountains to sea
- Ace Basin Topographic Map – students learn to interpret topographic map of ACE Basin
- Living Fossil – students will create a geological time line using various species

❖ **Optional Experiences:**

- Eco-boat tours aboard 25-foot vessel Spartina (additional cost; see description in next section for details)
- Phytoplankton Study (no additional cost; see description in next section for details)

❖ **Vocabulary:** aquifer, floodplain, groundwater, humidity, latitude, marine, nonrenewable resource, permeable, saturation, storm surge, water table

High School

- ❖ We'll customize an experience for your students. Please call to discuss possibilities that correlate to your unit of study.

PRICING & OPTIONAL EXPERIENCES

- ❖ **Standard field trip**, typically with three 45-minute rotations - \$6 per student.

- ❖ **Plankton: The Corner Stone of the Food Chain**

Biodiversity is what makes the Port Royal Sound so unique. Join Ecologist and Environmentalist Bill Weiss to explore the unseen world that is so abundant in our waterways. With the use of plankton nets, microscopes, preserved specimens, and Bill's vast knowledge on these tiny critters, you will dive into an unseen world that few ever have a chance to see. Why is this so important? These microscopic organisms range from zooplankton and copepods to larval fish, worms, and crabs. They make up the very bottom of the food chain, but are integral to life cycle stages. Bill will walk the class through sampling techniques, which organisms are most abundant seasonally, what are threats to these organisms, and how we can help to protect something that we can't even see, yet rely on at the same time!

- Limited Wednesdays and Thursdays.
- Targeted audience: 5th grade and up.
- No additional cost.

- ❖ **Eco-boat Tour**

Extend your field trip to the water with a 45-minute journey on the Chechessee River. Captain Amber Kuehn, owner/operator of Spartina Marine Education Charters, is a life-long water enthusiast, biologist and conservationist who grew up in Beaufort County and knows the waterways inside and out. Her unique background provides a hands-on learning experience that is hard to find. While cruising aboard *Spartina* - her custom built touring vessel* - students will investigate temperature, salinity and turbidity to learn more about the unique characteristics of the



marine life and fauna that inhabit the Port Royal Sound. Capt. Amber will bring various marine species aboard so students can see them up close in the holding tank and even handle them when appropriate. Her extensive knowledge on dolphins, sea turtles, and all-around marine ecology will get students excited to learn more and leave them wanting to conserve our ecosystem.

- Preferred days are Fridays and Mondays.
- Targeted Audience: 5th grade and up.
- Additional cost:
\$400 - up to 40 students
\$500 - up to 80 students

The Port Royal Sound Foundation wishes to have as many students as possible experience an eco-boat tour each year. We are very grateful to [Women in Philanthropy](#) for their generous grant which assists in making these trips available to students.

❖ **Widgeon Point Nature Hike**

Get a first-hand experience with our Naturalist walking through the Beaufort County Open Land



Trust's Widgeon Point Preserve. A beautiful tract of 160 acres on Lemon Island, just down the road from the Maritime Center. Featuring dynamic ecosystems including Maritime Forest, Salt pan and Saltmarsh, students will see and learn about wildlife, birds, local plants and ecology. Fun for all ages.

- Targeted audience: K – 8th grade.
- \$4/student.

❖ **Art & ELA Integration**

Extend student exploration of the Port Royal Sound watershed from the water, back to the classroom. Team up with your Art or ELA departments and challenge students to create artwork or poetry as permanent reflections of their field trip experience.

Beaufort County School District students may submit their visual and literary pieces for selection in the 2016 edition of *River of Words: Musings on Port Royal Sound through Poetry and Art*, a collaboration between BCSD and Port

Royal Sound Foundation. Submission deadline is January 22, 2016. A reception for all students selected will be held at the Maritime Center in the spring. For more information, contact Heather Brabham at 843-322-2304 or via email at heather.brabham@beaufort.k12.sc.us.

- Targeted audience: K – 8th grade.
- No additional cost.



❖ **Let us come to you!**

We think the Maritime Center is an awesome venue for exploring and learning, but sometimes a field trip just isn't doable and we understand that. In those situations, our Naturalist can visit your classroom and present a hands-on experience that provides your students with information about our local ecosystem in a fun and engaging way. They will gain an understanding of why our ecosystem is unique and an appreciation that will motivate them to take care of it.

- Targeted audience: K – 8th grade.
- Additional cost:
\$200 within Beaufort County
\$200 + travel outside of Beaufort County

THINGS TO KNOW FOR YOUR FIELD TRIP

❖ Scheduling:

- Field trips can be scheduled for any day of the week and typically last 3-4 hours depending on optional programs selected. Contact Chris Kehrer at 843-645-7774, ext 203 or ckehrer@portroyalsoundfoundation.org.
- Indoor and outdoor spaces are available for students to enjoy lunch. No on-site vending available.
- Signed waivers of liability are required for each student and adult.
- Payment is expected day of trip. Invoices can be provided in advance.

❖ Getting prepared:

- It is recommended that vocabulary words included with the field trip descriptions are reviewed to be better prepared for the lessons.
- Schedule a naturalist or one of our seasoned education volunteers to visit your classroom with a short lesson/activity to prepare and excite your students for their trip. No charge if coordinated in conjunction with field trip.
- Waivers of liability must be signed by each student's parent/guardian.

❖ What to wear/bring:

- Most field trips will involve an outdoor marsh experience. Students should wear clothing and shoes that can get muddied.
- Closed toe shoes are required.
- Hats are recommended.
- Sunscreen should be applied prior to arrival.
- Life vests are provided and must be worn by students at all times when on the docks or boats.



❖ After the field trip:

- Our naturalists and/or seasoned education volunteers are happy to visit your class with a follow up exercise that correlates with your field trip course work. No charge.
- We are always seeking input on how to make field trips an exceptional outing. Before you leave the Maritime Center, please take a few minutes to complete a short survey about your experience with us!



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WAIVER AND HOLD HARMLESS AGREEMENT

Name of School _____ Grade _____ Date _____

In consideration of being permitted to visit the Maritime Center and/or participate in activities provided, sponsored or promoted by the Port Royal Sound Foundation, I, or on behalf of the below-named minor participant, in full recognition and appreciation of the dangers and risks inherent in water based activities, do hereby RELEASE, WAIVE, DISCHARGE, AND COVENANT NOT TO SUE the Port Royal Sound Foundation, its Board of Trustees, officers, agents, volunteers and/or employees (hereinafter referred collectively as "PRSF") from any and all liability, claims, demands, actions, and causes of action whatsoever arising out of or related to any loss, damage, or injury, including death, that may be sustained by me or the below-named minor participant, or to any property belonging to me or the below-named minor participant, while participating in such activity, while in, on or upon the premises where the activities are being conducted, REGARDLESS OF WHETHER SUCH LOSS IS CAUSED BY THE NEGLIGENCE OF PRSF, or otherwise and regardless of whether such liability arises in tort, contract, strict liability, or otherwise, to the fullest extent allowed by law. I further hereby AGREE TO INDEMNIFY AND HOLD HARMLESS PRSF from any loss, liability, damage, or costs, including court costs and attorneys' fees that I or my minor child may incur due to participation in said activities.

ASSUMPTION OF RISK. I am fully aware of the risks and hazards connected with the activities in which I (or the below-named minor participant) am participating and I am aware that such activities include the risk of injury and even death. I understand that water based activities may pose a higher probability of injury or death on account of hazards that differ from the hazards of other activities in which I, or the below-named minor participant, may participate, including, but not limited to, wet or slippery surfaces, instability of water vessels, enhanced health risks to overexertion, over exposure to the sun or cold, and drowning. I hereby elect to voluntarily participate in said activities, knowing that the activities may be hazardous to my property, me and/or the below-named minor participant. I understand that PRSF does not require participation in this activity. I voluntarily assume all risks and full responsibility for any personal injury, including death, which may be sustained by me and/or the below-named minor participant, or any loss or damage to property owned by me, as a result of being engaged in such activities.

COVENANT NOT TO SUE. It is my express intent that this Waiver and Hold Harmless Agreement shall bind the members of my family and spouse, if I am alive, and my heirs, assigns and personal representative, if I am deceased, and shall be deemed as a RELEASE, WAIVER, DISCHARGE AND COVENANT NOT TO SUE PRSF. I hereby further agree that this Waiver of Liability and Hold Harmless Agreement shall be construed in accordance with the laws of the State of South Carolina and that any mediation, suit, or other proceeding must be filed or entered into only in South Carolina and/or the federal or state courts of South Carolina. Any portion of this document deemed unlawful or unenforceable is severable and shall be stricken without any effect on the enforceability of the remaining provisions. This waiver may be entered as evidence in any such court as a total and absolute defense to any claims made.

IN SIGNING THIS AGREEMENT, I ACKNOWLEDGE AND REPRESENT THAT I have read the foregoing Wavier of Liability and Hold Harmless Agreement, understand it and sign it voluntarily as my own free act and deed; no oral representations, statements, or inducements, apart from the foregoing written agreement, have been made; I am at least eighteen (18) years of age and fully competent; and I execute this Agreement for full, adequate and complete consideration fully intending to be bound by same.

Participant Signature _____ Print Name _____ Date _____

Address _____

Email _____ Phone Number(s) _____

Parent or Guardian Additional Indemnification (for participants under the age of 18)

In consideration of _____ (print minor's name) being permitted to participate in this activity, I further agree to indemnify and hold harmless PRSF from any claims alleging negligence which are brought by or on behalf of minor or are in any way connected with such participation by minor.

Parent/Guardian Signature _____ Print Name _____ Date _____