

# Environmental Education Program Class Descriptions

Environmental Education class descriptions are listed alphabetically and divided into Day Classes (2hrs) and Evening Classes (1hr). All classes are taught by Burton 4-H staff with the exception of Dolphin Cruise, Discovery Cruise and Sea Kayak Trips. For vendor classes, Burton 4-H Staff will assist with your transportation and group organization. Please note additional costs and reservations.

## 1. BEACH ECOLOGY

**Introduction to coastal Georgia's beaches.**

**Topics include:** Zones of the beach, barrier islands, biotic and abiotic factors, erosion and deposition, dune stabilization, identifying native plant and animal species and beachcombing.

**Methods:** Students apply what they learn by going to the beach and participating in hands-on activities.

**Water Rules:** Students will be allowed to go ankle deep in water if weather, water conditions and instructors permit.

**What to Wear:** Clothes and shoes (sandals, water shoes, close-toed shoes) that can get wet and sandy are strongly suggested. Otherwise, plan to dress for the season with comfortable, quick-dry clothing, layers, sunscreen and/or bug spray.

## 2. BIRDS (ORINTHOLOGY)

**Introduction to the study of birds.**

**Topics include:** What is a bird, characteristics of birds, beak and bill adaptations, niches, migration, ecological roles, using binoculars and field guides and identifying native bird species.

**Methods:** Students will learn about bird anatomy and adaptations, species identification, and how to use field guides and binoculars. Part of the class will take place at the beach and salt marsh for "birding."

**What to wear:** Shoes with heel straps or closed toed shoes. Otherwise, comfortable clothing.

## 3. COASTAL CRITTERS

**Introduction to a combination of reptiles, fishes and invertebrates.**

**Topics include:** Taxonomy, marine phyla, discovery tanks, reptile and amphibian identification

**Methods:** Students will learn about coastal reptiles, invertebrates, and have an opportunity to interact with our environmental education animals and specimens.

**What to wear:** Shoes with heel straps or closed toed shoes. Otherwise, comfortable clothing.

**Additional Info:** This is a combination class and not available if taking Reptiles(Herpetology) and/or Marine Invertebrates.

## 4. CHOOSIES

**Introduction to guided beach activities and creating student connections.**

**Methods:** Students "choose" activities they would like to participate being offered by Burton staff. Examples include but are not limited to: beach combing, kite flying, shark teeth hunting, sports activities (volleyball, touch football, soccer, ultimate Frisbee, etc.), sandcastle building, seashell jewelry making, birding and more!

**Water rules:** Swimming is NOT permitted. Students will only be allowed to go ankle deep in the water.

**What to wear:** Clothes and shoes (sandals with a back strap, water shoes or close-toed shoes) that can get wet and sandy are strongly suggested. Clothing must be worn over bathing suits.

## 5. FORT PULASKI TOUR

**Introduction to Georgia history and military operations at Fort Pulaski.**

**Topics include:** History of military technology, Georgia history, Civil War, and simple machines.

**Methods:** Instructors will lead students on a historical tour inside and around the fort to discover simple machines, the Third Defense System Fort and life in the 1800's. Students will also learn about the Battle of Fort Pulaski on April 10<sup>th</sup> 1862.

**Additional costs & reservations:** Students are free and groups receive 1 free adult per 5 students. All additional adults are \$10.00 per adult. Burton staff requires reservation request a *minimum of 10 weeks prior to trip*.

**What to wear:** Shoes with heel straps or closed toed shoes. Otherwise, comfortable clothing, bug spray and/or sunscreen.

**Website:** <https://www.nps.gov/fopu/index.htm>

## 6. MARINE INVERTEBRATES

**Introduction to marine invertebrates.**

**Age minimum:** 4<sup>th</sup> Grade

**Topics include:** Taxonomy, invertebrates vs. vertebrates, marine phyla, and invertebrate identification.

**Methods:** Students will observe and touch invertebrates in the discovery tanks, practice capturing invertebrates in belly biology, and observe their findings under microscopes.

**What to wear:** Shoes with heel straps or closed toed shoes. Otherwise, comfortable clothing.

## 7. MARITIME FOREST ECOLOGY

**Introduction to Georgia's maritime forests and barrier island ecology.**

**Topics include:** Zones of a coastal maritime forest, barrier islands, biotic and abiotic factors, succession, trophic levels, food webs and chains and identifying native plant and animal species.

**Methods:** Students will visit a maritime forest to identify different species and their roles in an island ecosystem.

**What to wear:** Shoes with heel straps or closed toed shoes. Otherwise, comfortable clothing, bug spray and/or sunscreen.

## 8. ORIENTEERING

**Introduction to the proper use of the compass, proper pacing techniques and GPS's.**

**Age Minimum:** 4<sup>th</sup> Grade

**Topics Include:** Math and problem solving skills, parts of a compass/GPS and how to use it, and how to find pace.

**Methods:** Students will calculate their pace and complete an interactive compass and/or GPS course at the center.

**What to wear:** Shoes with heel straps or closed toed shoes. Otherwise, comfortable clothing.

## 9. POLLUTION SOLUTIONS

**Introduction to different types of pollution with an emphasis on coastal pollution and marine debris.**

**Topics include:** Forms of pollution, marine debris, microplastics, data collection, bioaccumulation, biomagnification, the 3R's (reduce, reuse, recycling), composting and environmental practices.

**Methods:** Students will learn about different forms of pollution, its effects and construct solutions. Students will go to the beach to pick up pollution and record their pollution findings. This data is collected and entered in the Ocean Conservancy database.

**What to wear:** Shoes with heel straps or closed toed shoes. Otherwise, comfortable clothing.

## 10. REPTILES (HERPETOLOGY)

**Introduction to native and nonnative reptiles of the Southeast.**

**Topics include:** Reptile characteristics, reptiles vs amphibians, venomous vs poisonous, native vs nonnative species, key stone species, ecological roles, adaptations, misconceptions and conservation.

**Methods:** Students will learn about reptiles by observing and touching our environmental education animals.

**What to wear:** Shoes with heel straps or closed toed shoes. Otherwise, comfortable inside and outside clothing.

## 11. SALT MARSH ECOLOGY

**Introduction to Georgia's salt marshes.**

**Topics include:** Zones of the salt marsh, plankton identification, tides, functions of wetlands, living shorelines, trophic levels and identifying native plant and animal species.

**Methods:** Students apply what they learn by going to the salt marsh and participating in hands-on activities.

**What to Wear:** Closed-toed shoes are required, preferably rain boots. Boots can also be borrowed from our boot wall on-site. Clothes and shoes that can get muddy and wet are strongly suggested.

## 12. SHARK DISSECTION

**Introduction to dissection and fish anatomy.**

**Age Minimum:** 4<sup>th</sup> Grade

**Topics include:** Marine vertebrates, fish biology, shark anatomy, the importance of sharks and reasons to dissect.

**Methods:** Students will learn safe dissection procedures and how unique sharks are through a guided dissection. This is a great advanced dissection class.

**Additional Costs:** \$3.50 per student

**What to wear:** Required closed toed shoes. Otherwise, comfortable clothing.

### 13. SURF SLEUTH (SEINE NETS)

**Introduction to scientific data collection, fishing and team building.**

**Seasonal:** Only offered March–October. Students do not go seining if there is a weather or water advisory. A back-up class may be necessary even during warmer months for Burton staff to teach.

**Topics include:** Data collection, what a seine net is and how to use it, coastal fish of Georgia, and parts of a fish.

**Methods:** Students will go to the beach and use a seine net to catch and record species living in coastal Georgia's waters. Burton staff will record student data and results for the Georgia Department of Natural Resources (DNR).

**Water rules:** Swimming is NOT permitted. Students will only be allowed to go knee deep in the water.

**What to wear:** Required to wear shoes in the water. Clothes and shoes (sandals with a back strap, water shoes, close toed shoes) that can get wet and sandy are strongly suggested. No Crocs allowed. Clothing must be worn over bathing suits.

### 14. TYBEE ISLAND LIGHTHOUSE TOUR

**Introduction to Georgia history and architecture.**

**Topics include:** Georgia, Tybee and Savannah history, Civil War, Great Depression, and coastal defenses and protections.

**Methods:** Students will climb to the top of the lighthouse, explore the lighthouse grounds and Fort Screven.

**Additional costs & reservations:** \$8.00 per person. Burton staff requires reservation request a *minimum of 10 weeks prior to trip*.

**What to wear:** No backpacks allowed. Shoes with heel straps or closed toed shoes. Otherwise, comfortable clothing.

**Website:** <https://www.tybeelighthouse.org/>

### 15. WETLAND MONITORING

**Introduction to wetlands and water quality testing.**

**Age Minimum:** 5<sup>th</sup> Grade

**Topics include:** Scientific method, functions of wetlands, biodiversity, chemical testing, water quality, eutrophication and data collection.

**Methods:** Students will perform physical and chemical tests, such as turbidity and temperature, pH, nitrates, phosphates, and dissolved oxygen levels on the water from Horsepen Tidal Creek. This data is collected and entered in the Georgia Adopt-A-Stream database.

**What to wear:** Shoes with heel straps or closed toed shoes. Otherwise, comfortable clothing.

## **Day Classes (led by vendor): 2-hours per class**

### 16. DISCOVERY CRUISE

**Introduction to trawling on a coastal tidal creek.**

**Methods:** Students will learn about coastal ecology and also get to participate in a trawl!

**Additional costs & reservations:** \$11.50 per person and 20-person minimum. Alternatively, groups less than 20 can pay for 20 people. Burton staff requires reservation request a *minimum of 10 weeks prior to trip*.

**What to wear:** Shoes with heel straps or closed toed shoes. Otherwise, comfortable clothing.

**Website:** <https://www.bullriver.com/>

### 17. DOLPHIN CRUISE

**Introduction to coastal mammals and Tybee Island history.**

**Methods:** Captain Derrick's Dolphin tour will cruise to the mouth of the Savannah River. Students will learn about and see dolphins from the boat.

**Additional costs & reservations:** \$11.50 per person and 20-person minimum. Alternatively, groups less than 20 would pay for 20 people. Burton staff requires reservation request a *minimum of 10 weeks prior to trip*.

**What to wear:** Shoes with heel straps or closed toed shoes. Otherwise, comfortable clothing.

**Website:** <http://tybeedolphinadventure.com/>

## 18. SEA KAYAK & STAND-UP PADDLE BOARDING TRIP

**Introduction to teambuilding and coastal barrier island ecology.**

**Topics include:** beach ecology, marsh ecology, maritime forest ecology, birding, coastal animals, teambuilding and more.

**Methods:** Sea Kayak Georgia will teach students how to kayak in Tybee's intercoastal waterways.

**Additional costs & reservations:** \$45.00 per person. Burton staff requires reservation request a *minimum of 10 weeks prior to trip.*

**What to wear:** Shoes with heel straps or closed toed shoes and clothes that can get wet and sandy are strongly suggested. Otherwise, plan to dress for the season with comfortable, quick-dry clothing, layers, sunscreen and/or bug spray. Required to bring water bottle on trip.

**Website:** <https://www.seakayakgeorgia.com/>

## Evening Classes: 1-hour per class

### 1. ALLIGATORS

**Introduction to the life cycle of alligators.**

**Topics include:** Alligator life cycle, crocodile and alligator differences, conservation, threats, bio-facts and facts.

**Methods:** Students will get to view our alligator, play alligator related games and learn how they can help alligators.

**What to wear:** Shoes with heel straps or closed toed shoes. Otherwise, comfortable clothing.

### 2. ASTRONOMY

**Introduction to the moon and common stars, constellations and planets.**

**Seasonal:** Only offered from November-mid February due to sunset times.

**Topics include:** Stars, constellation stories, phases of the moon, planets and celestial matter in the universe.

**Methods:** Students will participate in a "planet walk," learn the phases of the moon and stargaze from our dock.

**What to wear:** Shoes with heel straps or closed toed shoes. Otherwise, comfortable clothing.

**Additional Info:** Limited for groups with less than 50 students.

### 3. CAMPFIRE (SONGS, SKITS & STORIES)

**Introduction to outdoor songs, skits and stories around a burning campfire.**

**Methods:** Campfire is a fun-filled evening for the students. Burton staff will lead the students in campfire songs, skits, jokes, games and stories. Students have the opportunity to interact socially in an educational and recreational setting.

**What to wear:** Shoes with heel straps or closed toed shoes. Otherwise, comfortable clothing and bug spray.

**Additional info:** The last ten minutes of campfire can be designated for s'mores. Burton can only provide s'more sticks and wood so please supply the rest of s'more materials. Alternatively, s'mores can be done on the school led evening as well.

### 4. CREPUSCULAR STUDIES / NOCTURNAL STUDIES

**Introduction to the beach at dusk/night and animal adaptations in the dark.**

**Seasonal:** Due to sunset times, darkness levels will vary. Nocturnal Studies takes place throughout October-February and Crepuscular Studies takes place throughout March-September.

**Topics include:** Astronomy, nocturnal, crepuscular, and diurnal animal adaptations, bioluminescent plankton, sensory awareness, and many more.

**Methods:** Students will participate in group activities that test their senses while exploring the beach at dusk or night. Students will also get the chance to view constellations and enjoy a solo sit on the beach.

**What to wear:** Shoes with heel straps or closed toed shoes. Otherwise, comfortable clothing and bug spray.

### 5. PLANKTON

**Introduction to the importance of plankton in our lives.**

**Topics include:** Phytoplankton, zooplankton, photosynthesis, trophic levels, food chains and webs, environmental indicators and plankton identification.

**Methods:** Students will learn about the ecological roles of plankton, play plankton related games, observe and identify plankton under microscopes.

**What to wear:** Shoes with heel straps or closed toed shoes. Otherwise, comfortable clothing.

## 6. REPTILES (HERPETOLOGY)

**Introduction to native and nonnative reptiles of the Southeast.**

**Topics include:** Reptile characteristics, reptiles vs amphibians, venomous vs poisonous, native vs nonnative species, key stone species, ecological roles, adaptations, misconceptions and conservation.

**Methods:** Students will learn about reptiles by observing and touching our environmental education animals.

**What to wear:** Shoes with heel straps or closed toed shoes. Otherwise, comfortable inside and outside clothing.

**Additional Info:** Limited for groups with less than 50 students as an evening class. No group limits as a day class.

## 7. SEA TURTLES

**Introduction to the life cycle of sea turtles.**

**Topics include:** Sea turtle life cycle, types of sea turtles, conservation, threats, bio-facts, and sea turtle facts.

**Methods:** Students will get to view our sea turtle, play sea turtle related games and learn how they can help protect sea turtles.

**What to wear:** Shoes with heel straps or closed toed shoes. Otherwise, comfortable clothing.

## 8. SEA STAR DISSECTION

**Introduction to dissection and invertebrate anatomy of sea stars.**

**Topics include:** Sea star external and internal anatomy, adaptations, life cycle, and threats.

**Methods:** Students will learn safe dissection procedures and sea star anatomy through a guided dissection. This a great intermediate dissection class.

**What to wear:** Required closed toed shoes. Otherwise, comfortable clothing

**Additional Costs:** \$1.75 per student

## 9. SQUID DISSECTION

**Introduction to dissections and the life cycle of squids.**

**Topics include:** External and internal anatomy, squid adaptations, squid life cycle, importance of squid and human uses.

**Methods:** Students will learn dissection procedures and how unique squids are through guided dissection. This is a great first dissection class.

**What to wear:** Required closed toed shoes. Otherwise, comfortable clothing.

**Additional Costs:** \$0.50 per student