

MARINE SCIENCE SUMMER PROGRAM
Pre-Application 2024
<http://www-grms.stjohns.k12.fl.us/marinescience/>

Dear Parents,

The St. Johns County School District is offering the Marine Science Program once again this summer. See the Parent Information Sheet and retain for your future reference. A full description of our curriculum and last year's video is available at our website.

Attention: Pre Application Process Requires BOTH Parts:

Part One: Parents complete the online registration at:

<http://www-grms.stjohns.k12.fl.us/marinescience/>

Part Two: Student will complete their entrance essay and return to their teacher for recommendation.

Both parts must be completed by March 1st for processing. Do not turn in any money with this pre-application.

If your child is selected for the program, a subsequent final application form with medical information (which must be notarized) will be **emailed** to you by the end of March. We will notify you by email not the US postal service. Make certain the email you provide in your registration is correct. Payment will be made when the notarized form is returned to GRMS by mail. The deadline for payment is **April 26th, 2024**. There is a high demand for our program those students not selected will be notified of our waitlist lottery.

The Marine Science Program is available for students currently in grades five through seven. This year, there will be two opportunities to take the 8-day course. Program dates will be Session 1: June 3, 4, 5, 6, 10, 11, 12, 13 and Session 2: June 17, 18, 19, 20, 24, 25, 26, 27. The cost of the program is \$450 for early registration. Please see the attached Parent Information Sheet for specific dates of attendance and payment.

The Marine Science Program has been in existence since 1982. It is a carefully designed experience for responsible students who are interested in learning about our local marine environments. Though the program includes some formal classroom instruction each morning, the emphasis is upon studying the coastal environment using "hands-on" learning while students are in the field for the majority of the day. Class sizes are small (12-15 students) and are separated by grade level. Students will also participate in canoeing, kayaking, boating, biking, paddle boarding, hiking and snorkeling activities.

Although scientific investigation is the core of this challenging program, an equal challenge is the opportunity of working with others to understand, appreciate, and benefit our threatened marine environments. For full curriculum, visit our website. A brief description is located on the back.

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A BRIEF CURRICULUM DESCRIPTION BY GRADE LEVEL

Students will rotate every two days to a new instructor. Below is a list of each rotation by grade.

6TH GRADE:

FRESH WATER ECOLOGY I, SNORKELING SKILLS AND SAFETY-Alexander Springs STAND UP PADDLEBOARDING (SUP), NUTRITION AND EXERCISE-Summer Haven

After a lecture on the formation of freshwater springs and their unique animal and plant life, the instructor will discuss snorkeling skills and safety procedures.

Students will begin the day with the life-long benefits of nutrition and exercise. Then skills and safe use of SUP's, students will explore the natural yet rapidly changing environment of the Summer Haven River.

CPR SKILLS-YMCA, SALTMARSH ECOLOGY I CANOEING SKILLS -Anastasia State Park

Students will practice CPR techniques and first aid skills with a licensed instructor. Then take a field trip to the YMCA pool for a water safety lesson with YMCA swimming instructors.

Students will participate in a discussion of the economic, recreational, and aesthetic importance of our local salt marsh ecosystems. The instructor will discuss canoeing skills and safety procedures.

ST. AUGUSTINE ECOLOGICAL BOAT TOUR FRESH WATER ECOLOGY I, KAYAKING SKILLS AND SAFETY-Riverdale Park

Students will explore the rich history of the oldest port city in America, St. Augustine has to offer. Our focus of interest will be the ecological changes that have impacted our coastal environment, since its founding in 1565. Alternate activity may take place due to availability of boat: Historic McCullough Creek

Students will participate in lectures and activities on the energy flow in St. Johns River. Compare and contrast local marine life to that of the freshwater environment of the river. Kayak trip up the St. Johns River and have time to fish.

COASTAL UPLAND HABITATS BICYCLE TRAIL RIDE-Princess Place SHELL AND FOSSIL IDENTIFICATION-Washington Oaks

Following a lesson on bicycle safety, students will travel to Princess Place Preserve where they will ride trails through the park's various upland habitats on the program's single speed beach cruiser type bikes.

The lecture will include the Pliocene history of underwater Florida and the formation of fossils. They will then sift and hunt for sharks' teeth, shell fragments, and other marine fossils in gravel sediments from Hogtown Creek in Gainesville and compare the pre-historic and current artifacts.

7th GRADE:

SALT MARSH ECOLOGYII, KAYAKING SKILLS AND SAFETY II-Bing's Landing FISH BIOLOGY II, SEAFOOD PREPARATION-Butler Beach

Students will participate in activities on the energy flow in salt marshes. This will include a presentation and identification activities of local marine plants and animals.

An introductory discussion includes paleo history of fish, external and internal structures of bony and cartilaginous fish, fish ecology, and fisheries management. Upon returning to the lab, students will dissect a variety of the vertebrate and invertebrate specimens.

FLORIDA'S AQUIFER SYSTEM, SNORKELING SKILLS AND SAFETY II-Silver Glen Spring, COASTAL DUNE ECOLOGY-Anastasia State Park

After a lecture on the formation and anatomy of freshwater springs and their unique animal and plant life, the instructor will discuss snorkeling skills and safety procedures. Students will view freshwater plants and animals in their natural habitats and discuss the importance of Florida's aquifer system and freshwater springs.

Students will discuss coastal dune geography and the characteristic plants and animals of high energy beaches. In a lab experiment, students will be analyzing biotic and abiotic factors present in dune ecology.

SALTWATER FISH MANAGEMENT, CANOEING SKILLS II-Princess Place WINDSURFING/SAILING SKILLS AND SAFETY I-Anastasia State Park

The class will participate in a class discussion of the factors in an ecosystem highlighting the interdependence between organisms, abiotic factors, and energy flow. Students will learn to compare various ecosystems such as spartina and juncus marshes, mud flats, and oyster beds. They will sample for organisms using seine nets and cast nets. They will also test for O₂ and salinity and record all data.

The instructor will present and discuss a video about windsurfing and sailing skills and safety procedures. They will discuss Bernoulli's Principle explaining how the difference between high and low pressure creates suction or lift that is utilized by sails. Half of the day, students will enhance their Stand Up Paddle Boarding skills with an additional small group instructor.

FRESH WATER ECOLOGY II-Deep Creek CPR SKILLS II-Anastasia State Park

Students will participate in a lecture and discussion about the connections between the freshwater rivers of Florida and the health of our saltwater ecosystems. The creek is a tannic riverine system that drains western St. Johns County and was the location of a logging town in the early 1900's when ancient cypress trees were cut and milled for northern cities.

Students will receive CPR and first aid training with a licensed CPR instructor. Students will also become familiar with and practice using AED's. They will then travel to Anastasia State Park for an orientation with St. Johns County lifeguards and a water safety demonstration and lesson.

8th GRADE:

SALT MARSH ECOLOGY III, KAYAKING SKILLS AND SAFETY III-Whitney Labs, FRESHWATER SPRINGS ECOLOGY/GEOLOGY, SNORKELING SKILLS III-Blue Springs State Park (late returning trip)

Students will participate in a lecture and activities on detrital energy flow in a salt marsh. The instructor will discuss kayaking skills and safety procedures. The emphasis will be on identifying salt and brackish water plants and animals and observing primary and secondary detritus feeders. Emphasis will also be put on identifying edible coastal plants during a short hike.

After a lecture on the underground springs and aquifer system of Florida, the instructor will discuss snorkeling skills and safety procedures. They will view freshwater plants and animals in their natural habitats while snorkeling. Students will also compare dissolved oxygen content to the presence of aquatic species and collect ongoing water quality data for park biologists. Students will hike the lowland hammock

area surrounding the spring and discuss the importance of Florida's aquifer system and freshwater springs. ***The trip will return approximate 4:45 to GRMS, then have limited bus stops home. Your child will know the first day of the program which day they will attend this late trip.***

**PHYSICAL DYNAMICS OF WAVE ENERGY, SURFING SKILLS AND SAFETY-Anastasia State Park,
WINDSURFING AND SAILING SKILLS AND SAFETY II-Anastasia State Park**

The physical dynamics of waves and the generation of wave energy on St. Augustine's beaches will be discussed. Topics will include origins of coastal wave energy, ocean bottom contours and their effects on wave energy. Students will participate in surfing lessons team taught by our instructors and Surf Station.

Students will discuss the science and history of sailing. The instructor will then present and discuss a video about windsurfing and sailing skills and safety procedures. The students will participate in a four-hour sailing and windsurfing lesson taught by Windsurfing St. Augustine instructors.

**STAND UP PADDLEBOARDING (SUP) III-Matanzas
PLANKTON STUDIES, BIOLOGICAL SAMPLING TECHNIQUES-Matanzas Inlet**

Students will participate in a lecture and discussion on the ecological importance of plankton's role in the aquatic/global food chain. Students will return to the lab to identify and compare their plankton samples under the microscope and videotape microscope scenes of live plankton.

While half the class is on the water with one SUP instructor, the other students with a second instructor will visit Ft. Matanzas National Park and discuss the natural and historical importance of this area. They will then take the park service's boat over to the old Spanish fort on Rattlesnake Island. Students in both groups will then rotate activities

**SUSTAINABLE FISHING IDENTIFICATION SKILLS FRESHWATER ECOSYSTEM COMPARISONS,
SAMPLING TECHNIQUES AND DATA COLLECTION-Boating
FRESH WATER ECOLOGY III CANOEING III-McCullough Creek**

After a discussion of our local fish habitats and best catch-and-release techniques, students will have the opportunity to practice fishing skills in adjacent areas of the Intracoastal Waterway. All specimens will be released on site, but students will record results for an ongoing data base.

Students will participate in a lecture and discussion about the connections between the freshwater rivers of Florida and the health of our saltwater ecosystems. A possible variation may be canoeing from Faver Dykes to Princess Place. Alternate activity may take place.

ALL CLASSES:

Students may develop skills for using various marine ecology instruments and tools such as: hydrometer, secchi disk, Kemmerer water sampling bottle, water quality test kits, dissolved oxygen kits, Ponar grab sampler, marine worm suction tubes, YSI flow meter, plankton nets, pH meters, cast and seine nets, depth recorder, microscope, balance and quadrat sampling equipment.

Location names may appear similar; however, most sites within the location vary for each grade level.