



Sanibel Sea School's Course Catalogue

Our mission is to improve the ocean's future, one person at a time.

Sea Squirts Courses

Designed for ages 4 to 6

1. Crabs – Creatures with Claws. What has eight walking legs, two claws, and one hard shell...? A crab! Crabs get a bad rep for their tendency to pinch, but these crustaceans are just misunderstood. In this course, we'll convince our young explorers that crabs use their claws for much more than pinching and do our best to encounter live crustaceans. Whether we dig in the sand to find spider crabs or peek into a ghost crab burrow, we're sure to leave this class with newfound love for clawed-creatures.

2. Dolphins – A Pod that Plays Together, Stays Together! Dolphins are incredibly playful creatures, and in this course, we will be too! We're going to learn about dolphin behavior, splash in the waves, and even try to catch fish just like a dolphin would. If we're lucky... we may even get a chance to see a playful pod riding the waves.

3. Sand – We Dig It. There are endless possibilities for fun when it comes to sand – building castles, digging for creatures, and burying your toes. But what is sand really? And where does it come from? We're going to answer these questions and more in this class. We'll make our own sand, discover where to find the softest sand, and learn about the creatures that call it home.

4. Sea turtles – From Sand to Sea. Hundreds of hatchlings burst out of the sand from nests all summer long in a mad dash for the Gulf of Mexico! Join us in this class as we uncover the mysteries of a sea turtle's life cycle. We'll learn where they lay their eggs, attempt to recreate our own nest, and try to make the beach a bit safer for these incredible animals.

5. Sharks - A Toothful Tale! Sharks have thousands of teeth, some with multiple rows. But despite this toothy grin, there's no reason to fear sharks. In this class, we'll learn to love these misunderstood fish and find out which species are nearby. Join us to explore the beach for shark teeth, investigate how sharks move through the water, and find out what differentiates sharks from other fish.

Half-Day Courses

Designed for ages 6 to 13

1. Algae - More Uses Than You Imagined. Algae, the plants of the sea, are commonly known as seaweed. But what are they and what do they do? We learn about different types of algae, the role they play in marine ecosystems and some of the great things that we use them for, and who the big algae eaters are.

2. Barrier Islands - Land Divided by the Sea. Sanibel and Captiva are barrier islands, which are fascinating, dynamic environments, from their formation to the types of biological diversity they support. We learn how islands like Sanibel and Captiva are formed, how they change through time and biologically, how they are different from the mainland.

3. Calusa - Evidence of a Lost Culture. Ages before European settlers arrived on our shores, the Calusa made their home here. We learn about these early inhabitants, how they influenced the islands, and what we think their lives might have been like. We travel to a Calusa mound to discover what they left behind, and see if we can imagine ourselves a part of this lost civilization.

4. Cnidarians – Animals with a Sting. Cnidarians are a group of aquatic animals that have specialized stinging cells known as nematocysts. We will learn which cnidarians we might encounter in the Gulf of Mexico, which ones are safe to pick-up, and what their role is in the marine environment.

5. Coconuts - Discover the Wonders of a Drupe. For centuries, civilizations across the world have relied on coconuts to produce food, drink, fiber, fuel, utensils, musical instruments, and much more. But what exactly are these tasty treats: a nut, a fruit, a drupe? Come join us on a journey to discover the wonders of coconuts. We will learn how coconuts are formed, what's inside, and whether or not they really belong in Florida.

6. Comb Jellies - Trading Sting for Slime! Ctenophores, also known as comb jellies, are slimy, see through creatures that exist in almost every body of water across the world! We will learn about their anatomy, how these squishy creatures move and eat, and about their bioluminescent capability. And no need to be afraid, these jellies do not sting!

7. Crabs - Crazy 10-Legged Critters. Crabs are ubiquitous members of the ocean community, making their living in as many ways as there are species. We explore the diversity of body types and lifestyles into which these animals have evolved. We also examine their unique biology, including their ability to grow despite their hard shell.

8. Dolphins - Flipping Through Life. What's not to love about dolphins? In this course, we explore the underwater world, learning how differently dolphins 'view' the ocean from the way we do. We also enrich our understanding of their social nature, hoping to encounter a playful pod in their natural environment.

9. Elasmobranchs - Cartilaginous Fish, Not Foe. Here's where we separate truth from tale about our friends: sharks, skates, and rays. If we could swim with them every day, we would. Sharks and stingrays are misunderstood creatures and we try to set the record straight so we can all better appreciate these imperiled ocean predators.

10. Fish - What's Better than a Fish? More successful than the dinosaurs, and much older than we are, fish are the most diverse group of vertebrate animals on Earth. Here on Sanibel and Captiva, our scaly friends surround us. As we collect and identify the common marine fishes of Southwest Florida, we learn how they breathe, hear, and communicate underwater.

11. Freshwater and Gators - Where There's a Baby, There's a Mama. Freshwater can be the limiting factor for land animals and plants living on a barrier island. Sanibel is blessed with a natural supply of surface fresh water. We learn about Sanibel's freshwater habitats and how they affect the local flora and fauna. In addition, we study one of the wetlands most notorious inhabitants, the American Alligator. Join us as we learn more about this alluring and awe-inspiring creature, and debunk myths about its killer instincts.

12. Horseshoe Crabs - Our Link to Prehistoric Days. Horseshoe crabs have been living in the shallow oceans since long before the dinosaurs were around. In this course, we have a look at this living fossil and discover that it is more closely related to scorpions and spiders than other crabs. We try our best to find a live one and discover a bit about its biology.

13. Manatees - Mermaids Among Us. Manatees are an iconic part of our shallow-water habitats in Southwest Florida, yet they are highly misunderstood. We hope to get a glimpse of these endangered mammals, learn about their unique biology and migration habits, explore why they are so vulnerable to boat injuries, and ponder how something so hulking can be so graceful.

14. Mangroves - Trees that Feed the Sea. Through photosynthesis, mangroves link the sun to the sea. These salt-adapted trees capture much of the energy that drives our marine communities and provide habitat to many species of wildlife. We learn how mangroves grow in salt water and explore the rich communities they support. We slog through a mangal (the term for a mangrove forest) and experience – first-hand – the riches of this environment.

15. Marine Worms – A Benthic Adventure. Marine worms are elusive invertebrates that live just beneath the sand in marine environments all over the world. In this class, we'll learn about three common worms that inhabit the benthic zone here in Southwest Florida. We'll discuss how they feed, how they protect themselves, and discover the special clues they leave behind that key us in on where they're hiding. Join us as we set out to uncover the wonders of worms for a wiggly, slimy benthic adventure!

16. Navigation - Finding our way in the world. For thousands of years explorers have been using navigation techniques to find their way around the globe. In this class, we'll learn how to use a compass, make and read maps, and even dip into the water to learn how sea creatures navigate the big blue. One can never be lost when equipped with the tools to navigate – join us to learn how to find your way.

17. Ospreys – Master Fishermen of the Sky. Ospreys are excellent fishermen; they spot their prey from high above the water, then dive to snatch it with specialized talons. We watch ospreys in action and examine some of their adaptations that allow for their way of life. It's difficult to believe they were once extremely endangered. We also study their important conservation success story.

18. Pelicans - Acrobatic Divers. “The magnificent bird, the Pelican – its beak can hold more than its belly can.” Pelicans are emblematic members of our local marine community. In this course, we explore the biology of the bird, observe pelicans in action and examine them as another example of a modern conservation success story.

19. Plankton - Adrift at Sea. Plankton were named the ‘drifting creatures’ long before we learned about their complex swimming behaviors. These are the plants and animals that, in many ways, support all life on our planet. We learn about plankton, collect it in specialized nets, and identify it with the microscopes back in the lab. We promise, you will never look at a drop of water quite the same way again.

20. Rocky Intertidal Zone - Attached at the Edge of the Sea. The zone between shore and ocean is biologically rich and environmentally challenging. Many different

creatures attach to hard surfaces, where, because of changing tides, they are both under water and exposed to air at different times of the day. We're going to explore some of these habitats and discover the plants and animals that make this harsh environment their home.

21. Seagrass - There are Flowers Under the Sea? The estuaries of Southwest Florida support rich seagrass communities. These plants are most closely related to flowering land plants and are vital to the survival of many marine critters, from nearly microscopic shrimp to enormous fish. We learn about seagrass beds, and explore them by foot and with mask and snorkel to see first-hand some of their inhabitants.

22. Seahorses - The Ultimate Mr. Mom. Famous for their role reversal in reproduction, seahorses are arguably the coolest fish on the planet – just ask any mom. Seahorses are also masters of disguise, camouflaging themselves in our local seagrass beds. We explore their habitats and learn about their voracious appetites. And who knows, we might just find a pregnant male!

23. Seashells - Sally Sells Them, but Who Makes Them? Sanibel Island is a shelling paradise, with hundreds of species waiting to be discovered. But who made these mysterious works of art and why are there so many shells on our beaches? Join us in this course to find out the answers to these questions and more. We'll comb the beaches in search of the most coveted shells, learn the names of a few, and dip beneath the sand to find the creatures that create them. We can't guarantee you'll find a junonia, but we promise you won't leave empty-handed!

24. Sea Turtles - One in 3,000 Chance of Survival. Southern beaches provide excellent nesting habitats for these amazing animals. We will learn all about this local resident, and perhaps, based on the season, even see the tracks from a nesting female, and the nest she left behind. We will also learn about efforts to conserve these captivating creatures.

25. Shorebirds - The Real Peeps. Those little guys playing tag with the waves, darting to and from the water's edge, and never seeming to get wet. Shorebirds are conspicuous members of the beach community, but who are they and what do they do? We examine physical aspects of these birds to see how they avoid directly competing with one another. We also explore their impressive feats of migration, as we are graced by the presence of shorebirds from around the world during different times of the year.

26. Shrimp – Perch, Swim, Flick! Shrimp have two claws for feeding, three legs for walking or perching, and five swimmerets – coming to a whopping ten joined appendages! But locomotion doesn't stop there; these crazy crustaceans can also flick their tail to move backwards for a quick escape! In this class, we'll explore adaptations of shrimp claws, determine their habitats, and spot local species. Best part? We'll solve the mystery behind the “snap, crackle, pop” heard when one dips beneath the surface...

27. The Soft Intertidal Zone - Traipsing Through the Muck. Southwest Florida's shoreline is replete in soft sand and mud. The rich area between the tides is filled with plants and animals of all shapes and sizes. In this course, we muck through the mud and sand, encountering fascinating creatures up close and exploring the best of this dirty world. There's nothing better than this dirty job.

28. Squid and Octopus - Naked Mollusks. Close relatives to snails and clams, these animals either have their shell inside their body, or have no shell at all. Squids and octopi are perhaps the most intelligent invertebrate animals, and although we can never be assured of finding one, we go on an octopus hunt, immersing ourselves in their likely haunts. We also explore the anatomy and behavior of these wonderful marine creatures.

29. Symbiosis - Peace, Love, and Symbiosis. Symbiosis, the interaction between organisms, is crucial to a healthy ecosystem. We will learn all about the types of symbiotic relationships, their impact on ecosystem health, and observe these interactions in the field!

30. Urchins, Dollars, and Stars, Oh My. The spiny-skinned creatures, echinoderms are the only major group of animals that live totally in the ocean. We explore their unique traits, and discover some of the many roles these animals play in marine communities.

31. Wading Birds - Birds on Stilts. Birds are amazing, diverse creatures. Wading birds look down on the water from their lanky stilts and add color and diversity to our local environments. We observe our local wading birds, learn some of the most common local species and study their methods for feeding from atop those long legs.

32. Waves - The Motion of the Ocean. We all love waves, whether we enjoy watching, riding, or playing in them. In this course, we explore how waves are formed and how we describe them. We learn to measure waves, and we might just try to catch a ride on one or two.

33. Zones of the Beach – Let’s Name the Zones! Together the swash zone, wrack line, and dunes make up our beach! In this course we will locate each zone, observe the creatures that inhabit them, and discuss how each one plays a role in the larger beach ecosystem.

Marine Masters: Teen Courses

Designed for ages 13 – 15

1. Fiddler Crabs – Claws for Courtship. Male fiddler crabs are adorned with an extremely large claw. This claw is mostly used for communication and to attract a mate. Fiddler crabs live on still, calm shorelines, and are a fun part of the marine fauna of Southwest Florida. We explore their habitat and marvel at the sheer tonnage of mud they clean up for the estuary.

2. Mollusks- You call that a foot?! Over 85,000 different known species of these soft-bodied creatures can be found all over our planet! Some shelled and some shell-less. But how did these creatures evolve to live in almost any environment on our planet? We go inside (literally) the world of some of the most intelligent creatures in the sea, and explore what makes them move, eat and exist!

3. Ocean Floor - Exploring the Underwater Unknown. Vast open spaces still exist for humans to explore. Although most think of outer space first, only a small fraction of Earth’s ocean has been investigated. In this class, we will discover the features found at the bottom of the ocean and the challenges scientists face with deep sea exploration. We’ll learn how to map the ocean floor and find unique creatures that call it home.

4. So, You Want to be a Biologist? Biologists study life on land and sea. Their role in monitoring wildlife is key to conservation and policy change. Life as a biologist is not always easy – here in SW Florida it often involves being dirty, sweaty, and hot! But it's all worth it to be able to interact with and observe Sanibel's incredible wildlife. Join us to learn more about what it takes to be a biologist, and try out techniques and tools used by the professionals.

5. Waves - Energy in Motion! Waves are all around us - from sea to sound. In this course, we'll explore the physics of waves and how they're formed in the ocean. We'll grab our mask and snorkel to dip beneath the surface and catch a glimpse of how sand shifts from the motion of the ocean. We'll learn how waves are measured and maybe even catch a ride on one too!