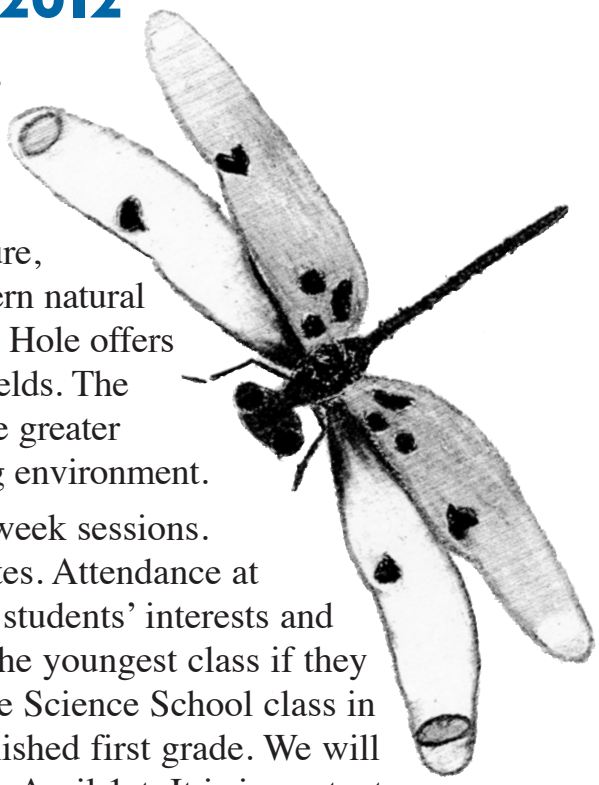
CHILDREN'S SCHOOL OF SCIENCE, INC.

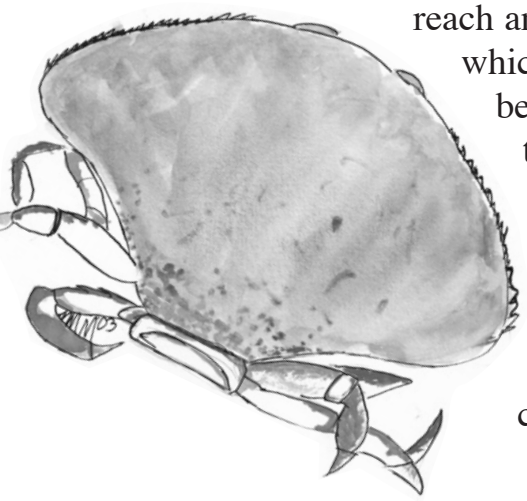
NINETY-NINTH YEAR

July 2 - August 9, 2012



The Children's School of Science encourages and develops in children a love and appreciation of science. Inquiry, direct observation, and understanding of nature guide our instructional philosophy. Frequent field trips and hands-on classroom study give students the opportunity to explore nature, become adept at observation, and discover the rules that govern natural processes. The world-famous scientific community of Woods Hole offers additional opportunities to learn about research in different fields. The unusual complexity of the waters, geology, and biology of the greater Falmouth area provides a uniquely well suited "live" learning environment.

Courses are organized into six-week sessions and three-week sessions. Classes meet daily Monday through Friday for ninety minutes. Attendance at every class is expected. Courses are organized according to students' interests and age appropriate study. Children may enroll in the youngest class if they reach an age of 7 years by the start of the Science School class in which they are enrolling and have finished first grade. We will begin placing students in classes on April 1st. It is important to have your registration materials in by this date. Please select alternate courses should your first choice be unavailable. We will make every effort to place children in their first choice classes; however, this will not always be possible. Our goal will be to place as many students as possible in a course. Additional courses will be assigned if space is available. First priority is given to children who have taken courses in previous years.



2012 Calendar

July 2 – First day of classes
July 3 – Back to School Night – 5-6 pm
July 4 – No classes
July 18 – Open Board Meeting – CSS 7 pm
July 20 – End of session A – Open House
July 23 – Session B begins
July 24 – Back to School Night 5-6 pm
July 26 – CSS picnic – Ballpark 5 pm
August 6 – Annual Meeting – Fisher House 7:30 pm
August 8 – Open House 5-7 pm
August 9 – End of sessions B and AB

The Children's School of Science is made possible through the cooperation and collective generosity of dedicated parents, teachers and benefactors. CSS gratefully acknowledges all contributions from its many friends, and families. CSS also gives thanks to Anonymous Donors, Bristol-Myers Squibb Matching Gifts Program, Church of the Messiah of Woods Hole, Clowes Fund, Esther Simon Charitable Trust, Ethel Metz Fund, Joelson Foundation, Marine Biological Laboratory, Memorial Funds in Honor of Past Presidents and Friends of CSS, NOAA Fisheries Service, Woods Hole Historical Museum, Woods Hole Oceanographic Institution, Woods Hole Public Library, Woods Hole Woman's Club.

CSS Website: childrensschoolofscience.org

2012 COURSES:

Numbers listed in parentheses indicate ages for each class; letters indicate the session(s).

SEASHORE LIFE (7-8) A, B, AB Students will explore and study the various areas of the seashore, including dunes, marshes, beaches, and shallow water. On field trips and in the classroom, students will learn about the flora and fauna of the seashore. Their activities may include setting up aquaria, experiments, art projects, and collections. In the three-week version, the students will explore the areas of the seashore and will learn about seashore life forms and their communities.

WOODS, PONDS, AND FIELDS (8) A, B Students will observe the local habitats of plants and animals both outdoors and in classroom tanks. They may make collections of plants, insects, and other natural objects. Separate units will introduce students to botany, entomology, herpetology, geology, and limnology.

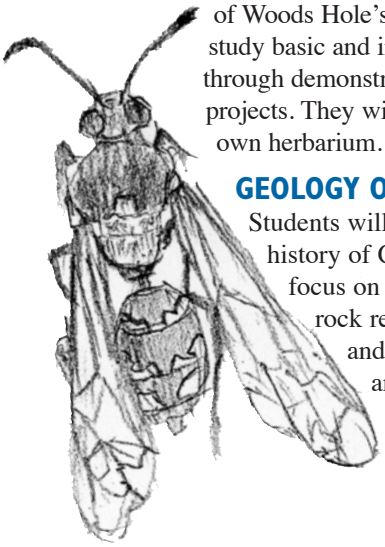
AQUATIC LIFE (8-9) AB Come learn about fish, crustaceans and other aquatic life found in our local bays, sounds and marshes. Using collection, observation and experimentation, students will become acquainted with the animals and plants that live an aquatic life.

ANIMAL BEHAVIOR (9) A, B Ever wonder why certain animals live where they do, or behave in particular ways? Through collection, observation and experimentation, this course will study the habits and habitats of local animals.

MARINE BIOLOGY (9-10) A, B, AB This is a diverse field-oriented course, which takes full advantage of low tide to see, study, and collect the major groups of animals and plants of the ocean. Students will visit rocky, sandy, and marshy ecosystems for their study. In the classroom, students will use dissecting microscopes and will make a shell collection. The six-week version will study these areas in greater depth.

ECOLOGY OF THE BIKE PATH (9-10) A, B Explore the unique places on the bike path. Bicyclists will study the ecology and geology of the aquatic and upland ecosystems along the Shining Sea bike path. There will be daily rides with weekly driving field trips to visit the more distant destinations on he bike path. Participants must use their own bicycles and helmets.

COASTAL BOTANY (10-11) A Study the fauna and flora of Woods Hole's coastal regions. Students will study basic and intermediate botanical concepts through demonstrations, experiments and projects. They will collect specimens for their own herbarium.



GEOLOGY OF CAPE COD (10-11) B Students will be introduced to the geological history of Cape Cod. The course will focus on such topics as: Cape Cod's rock record and history, fossils, soil and water. Laboratory modeling and fieldwork will help students examine the changes in the environment over the past geological period.

OCEANOGRAPHY (10-11) AB Students will examine the physical and chemical features that comprise our oceans. They will learn about ocean zonation, beach profiles, wave formation, astronomical observations on tides and currents, seafloor mapping, and considerations of light, temperature, and food. Students will also be introduced to marine robotics, as well as engineering and its oceanographic applications.

TERRESTRIAL ECOLOGY (11-12) A Experience the terrestrial ecosystem. Identify and investigate the fundamental elements: soils, plants and animals. Learn about watersheds, nutrient cycling, plant-animal interactions and succession through models, experiments and field trips. We will observe and explore how these components benefit us.

NAUTICAL SCIENCE (11-12) B Explore boat design and build a seaworthy model boat, learn to navigate by chart and compass, experiment with the principles of buoyancy and displacement, as well as delve into nautical terminology and practical seamanship. Classes take trips to the working waterfront and through Woods Hole Passage.

ICHTHYOLOGY (11-12) AB In this class, students learn about how to fish by using different baits and lures, as well as by setting traps and using seines. They also learn characteristics about species found in North Atlantic and freshwater habitats, in addition to observing their diverse forms and survival strategies.

HERPETOLOGY (12-13) A Study the reptiles and amphibians of the Woods Hole environs. Learn how 'herps' are different from other animals, where they live and how to identify them.

ENTOMOLOGY (12-13) B Why are insects so successful? Investigate the curious world of insects through the collection and classification of living insects. Study their morphology, habitats and role in human history.

EMBRYOLOGY (12-13) A How long does it take for an organism to develop? During development, a single cell will grow into many different cell types with different shapes and jobs. This course will introduce and explore the changes and stages of embryonic development in organisms. Through collection and microscopic research, students will follow the growth and changes in the embryo.

INVERTEBRATES (12-13) B Invertebrates - animals without backbones - make up 97% of all animal species. This hands-on class will survey the diversity of invertebrate phyla from the simplest to the most complex. Students will study internal and external anatomy, reproduction and feeding through observation of live specimens, dissection, and field trips to local ecosystems.

PARASITOLOGY (13-15) A Discover the relationship between a parasites and their hosts. What are their specialized traits and life-history strategies that enable them to colonize hosts? How are parasites eradicated and how can humans avoid them? Students will learn the answers in this class.

2012 COURSES:

ROBOTICS/ROV (13-15) B Students will focus on the technical, economic, environmental and social aspects of real-world marine engineering and electronics. Frequent field trips and data analysis will be used to study propulsion and energy. Through project design, data analysis and field exploration, students will explore the physical principles behind modern marine technology. Material Fee: $40.

MICROBIAL LIFE (13-15) B Find out more about the strange and exciting world of microbes. Observe and learn how bacteria, protists and fungi survive and thrive. Discover how they change and shape our environment. Students will collect samples from the local environment using the classroom for microscopic observation and learning.

PHOTOGRAPHY (13-15) AB In this popular, intensive, six-week class, students will review the basic principles of photography including the balance of light and time, composition and darkroom procedures for developing and printing film. The six weeks allow the students to focus on printing techniques and photographic essay. Participants provide own cameras; space limited to 10 students. Material Fee: $60.

BIOLOGICAL ILLUSTRATION (14-16) A Illustration can be a most useful and beautiful method of recording information. Become familiar with basic techniques of biological illustration, while examining the structure, anatomy and functions of local organisms. This course will also touch upon how biological illustrations are applied to science today.

EXPERIMENTS IN WOODS HOLE (14-16) A For more than a century, Woods Hole has been "an international center for research, education and training in biology." Distinguished scientists from around the world come to study the diverse and abundant marine organisms in local waters. This innovative course is designed for the discerning young scientist with an interest in and a curiosity for exploring the experiments and investigations that take place in Woods Hole.

MARINE MAMMALS (14-16) A Whales, dolphins and seals have long fascinated people. In this course, students will study behavior, communication, social structure, adaptations, interactions with humans and natural history of marine mammals. The course will include a whale watch.

ANATOMICAL DRAWING (14-16) B This illustration course is designed to introduce students to a comparative study of marine organisms. The anatomy of structures will be integrated with function, biological role, and adaptation to ecosystems.

ADVANCED MARINE BIOLOGY (14-16) B Students will delve into the biology and ecology of marine vertebrates and invertebrates, their evolution and classification, anatomy and physiology, ecology and behavior. This course will include snorkeling field trips, the design and analysis of an experiment, and a whale watch.

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Curriculum Chairs: Karen Schwalbe, Kim Sutton
Registrar: Crickett Warner
Teaching Assistants Chair: Jane Kulesza
Website and Facebook Administrator: Aaron Sloboda

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Isabel Sternlieb, Anne Wilde

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SCHEDULE OF CLASSES 2012

SESSION AB July 2 - August 9	SESSION A July 2 - July 20	SESSION B July 23 - August 9
8:30 – 10:00 **Session AB** Seashore Life (7–8) Aquatic Life (8–9) Marine Biology (9–10) Ichthyology (11–12) Photography (13–15)		
	10:15 – 11:45 **Session A** Ecology of the Bike Path (9–10) Coastal Botany (10–11) Terrestrial Ecology (11–12) Herpetology (12–13) Experiments in WH (14–16)	**10:15 – 11:45** **Session B** Ecology of the Bike Path (9–10) Geology of Cape Cod (10–11) Nautical Science (11–12) Entomology (12–13) Robotics/ROV (13–15)
12:00 – 1:30 **Session AB** Oceanography (10–11)	**12:00 – 1:30** **Session A** Seashore Life (7–8) Animal Behavior (9) Embryology (12–13) Marine Mammals (14–16)	**12:00 – 1:30** **Session B** Seashore Life (7–8) Animal Behavior (9) Invertebrates (12–13) Advanced Marine Biology (14–16)
	1:45 – 3:15 **Session A** Seashore Life (7–8) Woods, Ponds & Fields (8) Marine Biology (9–10) Parasitology (13–15) Biological Illustration (14–16)	**1:45 – 3:15** **Session B** Seashore Life (7–8) Woods, Ponds & Fields (8) Marine Biology (9–10) Microbial Life (13–15) Anatomical Drawing (14–16)

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