

## Science in Education

The programs are listed below by grade level and are updated as we add and improve our roster. Please contact a member of the Science in Education Committee if you have any questions or comments.

### **KINDERGARTEN**

**Let's Make Sense:** The students have fun as they make sense of their senses. They explore our five senses, one sense at a time. They discover how much we rely on our senses and how easy they are to fool.

**Mammals:** From whales to humans, mammals come in a myriad of forms. Students will get up close and personal with a marsupial from Australia, chinchillas from the Andes Mountains, and more as they discover what it takes to be a mammal and how these creatures survive in their unique habitats.

**Weather or Not:** Students will learn about weather, as they take an up close and hands on look at a real tornado, make clouds and rain indoors, and discover all the amazing properties of air and air pressure. Other highlights include touching lightning and making the conditions change as they lift ice cubes with a string.

**Living vs. Non-Living Things:** The children take a spring field trip to the Maritime Aquarium in Norwalk. While there, they will have a guided discussion where they will share their observations about the characteristics of living and once-living organisms, as well as non-living things. They will compare and contrast two live animals of the same grouping.

### **1<sup>st</sup> GRADE**

**Biome Sweet Home:** Students will explore the Earth's climate zones and biomes. They will discover how animals have adapted to survive. They will match animals to their habitats and see how the animals interact with their environments and each other. They will use their imaginations to build and keep an "alien" that can adapt to an exotic planet.

**Metamorphic Mystery:** Insects and amphibians have an amazing common bond...the incredible change of life called metamorphosis. With a variety of live amphibians and insects, students will meet real life examples of creatures that go through this fascinating transformation. With Animal Ambassadors such as a giant African bull frog, beautiful Red-eyed tree frogs, local Spotted salamander & Eastern newts, Madagascar hissing cockroaches, and mounted butterfly & Luna moth specimens, students will discover the wonders of these animals' incredible life cycles.

**Smarty Plants:** The students will discover how plants make food and oxygen. Then they will learn how plants transport water as each child turns his or her very own carnation blue. This program also teaches how to read tree rings and will provide all the seedy facts about germination.

**Force of Habit:** The children push and pull their way through the natural forces of gravity, friction, and magnetism. They feel how these start, stop, and accelerate everything around us.

## **2<sup>nd</sup> GRADE**

**Dinosaurs Rock:** The Riverside School café is transformed into a museum with an amazing display of dinosaur fossils and other prehistoric items (both genuine and museum-quality reproductions) ranging from 10,000 to 500 million years old. Students can touch a 9 foot leg of an Ice Age Mammoth and see a life-size head of an Allosaurus while they learn about plant vs. meat-eaters and what scientists think happened to the dinosaurs. Students have the opportunity to discover and keep genuine fossils (dinosaur bone, shark teeth, ammonites, petrified wood and more) on their own Fossil Dig.

**What's the Matter?:** Student scientists learn about the real differences between solids and liquids. They investigate some very strange matter as part of this classroom workshop. They weigh air and show how a liquid turns into a solid as they make some ice cream in the classroom.

**Reptiles:** Surrounded by myth and mystery, snakes, lizards, turtles and their relatives have existed for millions of years. Students will go to the Stamford Nature Center to see the reptiles and their vernal pools up close. Students will explore the fascinating world of reptiles as they come face to face with an African monitor lizard, giant Sulcata tortoise, a python from South East Asia, and other surprises.

**Give Me Dirt :** Students will take a hands-on look at the inner workings of a plant and learn how it uses soil, water, sunlight, and carbon dioxide. Soil is not just “dirt” when it comes to plants.

**Bartlett Arboretum Field Trip:** Plants have played a vital role in the lives of humans of all cultures for thousands of years. The students discover plants that heal, clothe, nourish, shelter, and inspire us. Also, they learn about the defining characteristics, growth, and life cycle of trees on the property through observation and hands-on exploration as well as investigate the honeybee hive, handle the tools that beekeepers use, and take a tour through our blooming gardens to see bees in action.

## **3<sup>rd</sup> GRADE**

**Field Trip to the New York Botanical Garden:** Using the garden as a classroom, students explore the parts of a plant and its life cycle. The importance of plants in our everyday lives becomes clear as students learn that many of the things we use, eat, wear, and live in are made from plants.

**Metamorphic Mystery:** Insects and amphibians have an amazing common bond . . . the incredible change of life called metamorphosis. With a variety of live amphibians and insects, students will meet real life examples of creatures that go through this fascinating transformation. With Animal Ambassadors such as an Axolotl, a giant African Bullfrog, White's Tree Frogs, a local Spotted Salamander & Eastern Newt, Madagascar Hissing

Cockroaches, and mounted Butterfly & Luna Moth specimens, students will discover the wonders of these animals' incredible life cycles.

**Mixed Up Matter:** It's no simple matter: it's mixed up or not; sinks or floats; freezes or boils. Students will find the solutions by making matter disappear in liquids. They will also discover what density is by experimentation.

**Dig It:** In this program, students will step into the world of geology, learning about gems, rocks, and minerals and how the Earth makes them. Students will pan for real gems (they will get to keep what they find) and classify the gems to find out why they are so precious.

#### **4<sup>th</sup> GRADE**

**Watersheds:** Denise Savageau, the Director of the Town of Greenwich's Conservation Commission, will speak to the 4<sup>th</sup> graders again this year. She will help them to understand where their drinking water comes from, how our wastewater is treated, and the wonder of Long Island Sound. She will help the students to view the town of Greenwich as a watershed and teach them how to protect the community's water resources.

**Soundwaters Field Trip:** Provides students with a critical link to the most significant natural resource in the region: Long Island Sound. Children study seas and oceans, but they have only limited opportunity to visit their own coastal environment and see key concepts (such as habitat, ecology, and biodiversity) in a real and vital way, which is what they get to do on this trip.

**New York Hall of Science:** New York Hall of Science presents 450 exhibits, demonstrations, workshops and participatory activities that explain science, technology, engineering, and math.

**Water, Erosion and Watersheds:** The students will travel to the Audubon property where they will see first-hand examples of the interaction between water and the landscape. They will search for clues of ancient glaciers and study the effects of the water cycle and water erosion in the stream and sediments of our Byram River watershed. The students will participate in activities involving careful observations and measurements as they hike the property.

#### **5<sup>th</sup> GRADE**

**Power of Light:** The students will find out just how amazing light is. They will bounce it, bend it, and split it up. They will find out where Roy G. Biv is in the electromagnetic spectrum. They will build a pin-hole camera to see how our eyes work. They will discover that seeing is not always believing when it comes to light.

**Vibes:** Catch the vibes...and students will find out the amazing facts about sound. Activities include discovering what sounds are, seeing sounds, and making sounds move things around. The students will learn about wave motion and find out about hearing as they make their very own eardrums.

**Connecticut Science Center:** Fifth grade students will travel to the Connecticut Science Center in Hartford to do several programs, including one on senses. This program explores how we use our senses to understand what is happening around us, as well as how well we can make decisions when our senses are limited.

**Cosmic Capers:** Students will launch rockets as we travel through our solar system, then they will send signals around the Earth using satellites. Students will explore how weight and age can change on the journey through space. Also included is an opportunity to enjoy some astronaut ice cream and make a sundial.

### **ALL GRADES**

**The Magic of Chemistry (Lisa Lou):** Magic tricks and circus skills help explain atoms, molecules, the elements, compounds, solutions, magnetism, and static electricity. Using ingredients found in everyday life, a balloon inflates all by itself, plain water changes colors and disappears, and liquids “magically” become solids. Whether juggling “atoms” and “molecules,” or explaining electrons as their hair stands on end (with the help of a VanDeGraaf generator), this delightful show beguiles the audience while introducing simple and effective science concepts.