



HOME SCHOOL SCIENCE

2011-2012

Sci-Quest invites families to participate in Home School Science, a program designed specifically with the homeschooler's needs in mind. On the second Wednesday of each month*, Sci-Quest educators will lead participants through a number of exciting topics and hands-on activities. Each program is different and has age-specific activities. Sci-Quest also provides a parent take-home sheet with information and review questions that will extend the learning at home. *Some dates differ due to holidays and other Sci-Quest events.

Elementary Science

Core Science Each month, Sci-Quest educators offer a variety of science topics designed to excite and engage your children in science. Each topic is based on national and state science standards.

Ages 5-7 and 8-10 Core Science Topics

Times offered: 9 am and 10:30 am

August 10	Rainbows	Light is everywhere in our world. We need it to see: it carries information from the world to our eyes and brains. In this program, your child will learn the difference between types of light, how light travels through a variety of objects and that rainbows are everywhere.
September 14	Fossils	Your child is sure to have a rockin' good time as they learn how fossils are made and why they are important. Children will clean a fossil just like a paleontologist and get a fossil replica to take home.
October 5*	Glow in the Dark	You won't need a light to see how cool science can be! Children will investigate the different ways things can glow by doing hands-on chemical reactions, see how a glow stick works, and even create some glowing slime to take home.
November 9	Crime Science	Children will put their crime fighting skills to the test as they learn about crime science, make and analyze fingerprints, and



		get a magnifying glass to take home.
December 14	Seasonal	This holiday themed program is NEW every year. Children make science-themed presents for their friends and family.
January 11	Stars and Galaxies	Children will learn about how stars are formed and the differences among them. They will find out how stars are organized into constellations and make a star viewer to take home.
February 8	Brain and Nervous System	Your child will construct a model of his or her own brain and observe the instructor dissect a real sheep brain! This program is sure to get you "thinking" about science!
March 21*	Earthquakes	Shake, rattle, and roll your way through this class as your students learn how the Earth's forces cause shifts in tectonic plates, resulting in changes on the surface of the Earth. They will compare the Earth's moving plates to a Milky Way candy bar. Finally we will discover if a tower they build can withstand a simulated Earthquake.
April 11	Music and Sound	Hear all about it! Science will surely be heard in this program about the workings of the ear. Children will be all ears as we examine how sound works, make a sound scope, and use tuning forks to make sound visible.
May 9	Bubbles	Your child will delight in making a soapy splash as they get caught inside a bubble and make their own bubble wand. Students are sure to be popping with excitement after this program.

*Some dates differ due to holidays and other Sci-Quest events.

Applied Science This year, Sci-Quest's Applied Science topics center around specific careers and the tools and mathematical concepts needed in those careers. Topics will include math concepts like map reading, probability, ratios, and sampling.

Ages 5-7 and 8-10-Applied Science Topics



Times offered: 12:30 pm and 2:00 pm

August 10	Be a Food Scientist	What would it be like to invent new foods? Your child will discover food science techniques, learn about viscosity, tell how much moisture is in something, and taste new food inventions.
September 14	Be a Field Biologist	How do animals and plants interact with their environment? Children will learn how field biologists observe, measure, and analyze animal and plant behavior to answer these questions.
October 5*	Be a Rock Hunter	Geologists use special tools and mapping skills to "read the ground" and locate the rocks and minerals they are seeking.
November 9	Thanksgiving Arithmetic	If I need to finish $\frac{2}{3}$ of my dinner to watch a movie, how much more do I need to eat? How much of my plate needs to be filled with veggies so I can have a healthy meal? Your child will get a new spin on Thanksgiving as they learn how to use ratios and proportions to learn about nutrition in this food filled program.
December 14	Seasonal Math	What's the likelihood that I will get the present that I want? What if I ask more than one parent? These questions and others will be answered in this fun holiday program that will show your child how probability is a very useful type of mathematics.
January 11	Be a Race Car Engineer	Feel the need for speed as we learn what it takes to be a race car engineer. Learn about kinetic and potential energy, the difference between speed and velocity, and design a race to test in our mini wind tunnel.
February 8	Be an Architect	Learn what it takes to be an architect and the tools needed to design and build the buildings of the future using traditional and cutting edge technology.
March 21*	Be a Sports Scientist	Learn about forces in action, pitching physics, flight basics and all kinds of interesting sports science topics. We'll even learn a little about healthy eating in this super sporty program.



April 11	Be a Hurricane Hunter	It is hard to imagine, but a group of pilots called The Hurricane Hunters actually fly directly into hurricanes. Learn how these brave scientists use maps and tracking systems to learn more about hurricanes to save lives.
May 9	Be a Aeronautical Engineer	3,2,1, Blast off! Learn what tools engineers use to design and build flying machines. Learn about aerodynamics and design paper airplane to test in our mini wind tunnel.

*Some dates differ due to holidays and other Sci-Quest events.

Middle School Science

To keep up with the growing demands of older children, Sci-Quest offers programs for 11-14-year-old students for 2 hours. These programs are based on popular labs found in science curriculums used by homeschoolers.

NEW for 2010-2012 Sci-Quest is pleased to offer a Biology course in addition to the General Science course and Physical Science offered in 2010-2011. If your child participated in the middle school program in 2010-2011, and they have already taken the General Science course they can sign up for the Biology course or the Physical Science course. NOTE: General Science is a prerequisite for both Physical Science and Biology. Your child does NOT need to have taken Physical Science in order to take Biology.

Ages 11+ General Science

Perquisites: None

Time offered: 9:00 am

August 10	History of Science	Science is a subject that has been around for ages! We will take a trip through history to uncover how science has changed over the years. From early Biology and Chemistry to advanced forms of technology, we will travel from the beginning and even explore into the future.
September 14	Scientific Method and Experimentation	All great scientific discoveries occur through experimentation and the use of the scientific method. By completing a few of our own experiments, we will learn the importance of following the scientific method to ensure experimental results are accurate.
October 5*	Simple Machines	In this program, students will learn about the mechanical advantage, and why it is important in machines. By building models of the different types of simple machines and testing



		the mechanical advantage of each, students will gain concrete knowledge of this important scientific concept.
November 9	Geology	Rocks can provide us with a lot of information about the Earth. We will see examples of rock types, make models of rocks, and study the rock cycle. Students will determine how weathering can affect rocks over time.
December 14	Fossil Record	Fossils tell us what kind of organisms once lived! Using the fossil record is a great way to track down Earth's history. Students will get to see and study real fossils and make a model of a fossil.
January 11	Life	Students will learn the basic structures that make life possible. From plants to animals and everything in between, we will look at living creatures. They will also learn how to classify organisms into kingdoms.
February 8	The Human Body	One of the most complex machines in the world is the human body. Students will get an overview of the basic body systems. They also will learn how food is our "fuel."
March 21*	Digestion	It may be gross, but it's also a fact of everyday life: we must digest what we eat! Students will travel through the digestive system from beginning to end, determining how food is broken down, and how our bodies use it.
April 11	Body Systems	This month, we will study a few of the body systems such as respiratory, circulatory, endocrine, lymphatic, and urinary. We will determine what the purpose of each system is and how our body uses these systems to do simple tasks.
May 9	The Nervous System	There is so much to say about the nervous system! The nervous system includes the brain and all the senses. Students will determine what makes our senses unique and important!

*Some dates differ due to holidays and other Sci-Quest events.



Ages 12+ Physical Science

Prerequisite: General Science

Time offered: 11:30 am

August 10	Atoms and Molecules	The first program in this course covers the basics of all physical science, atoms and molecules. Learn how atoms are organized, learn the difference between solutions and mixtures, and make an atomic cookie to take home.
September 14	Air and Atmosphere	The atmosphere is a blanket of air that covers the earth. In this program, learn about humidity, gas laws, what our atmosphere is made of, how carbon dioxide can heat up the planet, and why the ozone layer is so important.
October 5*	Water and Hydrosphere	Every living thing on our planet depends on water. In this program we will split water into Hydrogen and Oxygen, experiment with water's properties, and make a miniature ocean to take home.
November 9	Earth and Lithosphere	Our earth is moving all the time! Learn about the layers of the earth, rock cycle, earth's magnetic field, plate tectonics, earthquakes, and create a mini volcano to take home.
December 14	Weather and Its Prediction	Your students will be prepared for any weather as they learn all about approaching weather systems. Through hands-on experiments, they'll create a density column with warm and cold water and make a lightning detector to take home.
January 11	Introduction to Motion	This month, children will learn all about the science of mechanics, which is the study of objects in motion. We will calculate the speed, velocity, and acceleration of an object by launching balloons and other objects.
February 8	Newton's Laws	Sir Isaac Newton was an important figure in the history of science. This month, learn about Newton's laws, how they are calculated, and make a rocket to take home.
March 21*	Waves and Sound	Sounds like science! Learn about water and sound waves, discover how waves travel, and make a sound drum to take



		home.
April 11	Light	We will shine a light on the different theories of light as the children learn about the EM spectrum, and bend and reflect light in this illuminating program.
May 9	Stars and Galaxies	Starting with our sun, we will delve into astrophysics by exploring the stars, star cycles, types of galaxies, and theories about the universe.

*Some dates differ due to holidays and other Sci-Quest events.

Ages 12+ Biology

Prerequisite: General Science

Time offered: 2 pm

August 10	Introduction to Taxonomy and Classification	Your child will be introduced to the study of living things by learning about the characteristics of life, how the scientific method works, and how biologists organize things.
September 14	Monera and Protozoa	Children will get a firsthand look at life in the smallest drop of water. Learn about protozoa and bacteria and how they form the basis of all life on our planet.
October 5*	Fungi	Fungi are more than the mold on your bread! Learn all about this amazing life form; look at fungi under the microscope, and see how fungi live with other organisms for mutual benefit.
November 9	The Cell	Living things have a very specific organizational structure based on the cell. Children will learn the basic parts of a cell, how cells communicate with others, and make a cell ornament to take home.
December 14	DNA	DNA is the mysterious molecule inside every living cell in our bodies. We will investigate how DNA is put together, perform different experiments to extract DNA from unlikely sources, and see how DNA gives directions to the cells in your body.



January 11	Invertebrates	Wiggle, Squiggle, Squirm...Come and get a close-up look at a worm! In this program, we will learn the characteristics of creatures without a backbone, see what life is like for a sponge, and dissect an earthworm.
February 8	Arthropods	Arthropods are the most successful animals on our planet. Learn about what makes them so successful; the difference between insects, crustaceans, and spiders; and dissect a crayfish or grasshopper.
March 21*	Chordates	Children will learn about animals with internal backbones, how they differ from the invertebrates, and dissect a perch.
April 11	Plants	Plants can be weird and wonderful. Children will learn about plant structure, what's inside a seed, and see some strange plants with some interesting eating habits.
May 9	Reptiles, Birds, and Mammals	For the final class of the course, children will learn about higher life forms and what makes them special. See how reptiles and birds are related, dissect an owl pellet, and see a real rat dissection.

*Some dates differ due to holidays and other Sci-Quest events.



Topics, Times, and Prices

Age Group	Topic	Times offered					
Ages 5-7	Core Science	9:00 am	10:30 am				
Ages 5-7	Applied Science				12:30 pm		2:00 pm
Ages 8-10	Core Science	9:00 am	10:30 am				
Ages 8-10	Applied Science				12:30 pm		2:00 pm
Ages 11+	General Science	9:00 am					
Ages 12+	Physical Science			11:30 am			
Ages 12+	Biology						2:00 pm

Elementary School Program Length: 1 hour

Middle School Program Length: 2 hours

Fee: \$9 per person (plus admission)

Fee: \$16 (plus admission)

Registration Notes

- Advanced reservations required at least two weeks in advance. No last minute reservations will be accepted.
- Full payment must be made at least two weeks in advance and may be made by cash, personal check, money order or credit card.
- No refunds will be given to participants not attending on their scheduled date unless reservations are cancelled at least one week in advance.
- Sci-Quest reserves the right to cancel a program in the event that a minimum capacity is not reached. If this should occur, 100% of registration fees will be refunded.
- Program fees do not include discounted admission fee of \$6 per person. Sci-Quest Members receive complimentary admission.