



the stars challenge

FALL 2015
inspiring future innovators

KEY DATES

September 25:
Applications due

September 29:
Notification
of acceptance
by e-mail

October 5
Tuition is due

October 3 & 5
Classes start

Apply on-line at
www.starschallenge.org

Questions:
732.530.1061

Mission

The Stars Challenge is a science enrichment program for top 6th, 7th, 8th and 9th graders hosted by Monmouth University. Our goal is to involve more middle school students in science and technology. Developing top notch scientists, engineers, and mathematicians is critical to maintaining America's lead in technology and innovation.



One secret of coding: teamwork really helps solve problems. And is fun!

Our goal is to nurture students' passion and curiosity about science. We start with excellent teachers who lead creative, hands-on classes. Working in small groups, students tackle real world problems and see how they can make a positive impact on society through science and technology.

Fall 2015 Courses

For 7th and 8th grade girls, Mr. Roche and Mr. Hanas will teach **Code Secrets: Girls, Science, and Coding**. This offering will challenge the young ladies to continue to develop computational thinking as we introduce additional platforms and languages for exploration. Newcomers are welcome and we'll quickly have you "up to speed" related to computer science.

Mr. Fusco's popular **Explore Biotechnology** course will be offered again for 8th graders. This hands-on experience will take students on a fantastic voyage around the laboratory. Each week we will explore how living

organisms are used to make our lives easier.

Ms. Burich of the NJ Sea Grant Consortium will be leading 6th and 7th graders in their investigations of the marine, coastal, and estuarine habitats of the New Jersey shoreline in **Explore Our Shore Like Never Before**. You'll get to know first-hand some of the unique marine life of the Jersey Shore.

7th and 8th graders will be using your creativity and knowledge of physical science to design and build the winning solution to the challenges Mr. Valente will bring to **Olympics of the Mind**.

Mr. Coe will teach **The Environment and You** for 8th and 9th graders. You'll explore how every aspect of your life is dependent on the natural world. You'll put on waders and analyze the water quality and macro invertebrates in Whale Pond Brook in order to understand our environment.

More detailed information can be found on our web site, www.starschallenge.org.



Analyzing water quality in Explore Our Shore Like Never Before.

Fall 2015 Logistics

Classes typically meet from 6 p.m. to 8 p.m. on the campus of Monmouth University for 10 weeks beginning in early October. Exact times and locations are on the reverse side. Tuition is \$500. Some needs-based scholarships are available. Please see our web site for more details and to use our on-line application.

CODE SECRETS: GIRLS, SCIENCE, AND CODING 0000010 - 7TH and 8TH GRADE GIRLS

We enjoyed a fun-filled, fast-paced experience in July during our “for girls only” coding course that involved multiple aspects of computer science. We’ll definitely replicate the fun-filled aspects, but using new technology and introducing some new platforms and languages. During the first half of the course, new students will get “up to speed” using Hour of Code activities and veterans will experiment with the Arduino Digital Sandbox. By the second half of the course all students will be working together on MIT Scratch, HTML/CSS and MIT App Inventor projects. All students will be challenged with opportunities to creatively apply programming concepts. Mr. Michael T. Roche and Mr. Christopher Hanas of High Technology High School will teach this course. Classes will meet on Monday evenings from 6 to 8 PM beginning October 5. (*Sorry guys ~ not for you ~ we’ve had too much fun with our “girls only” coding courses.*)

EXPLORE OUR SHORE LIKE NEVER BEFORE - 6TH and 7TH GRADE

Summer may be over but you can still enjoy the beach and learn much more about it. This course provides hands-on and minds-on investigations of the marine, coastal and estuarine habitats of the New Jersey shoreline. For example, have you ever wondered why waves push your surfboard forward or how rip currents form? You’ll get to know first-hand some of the unique marine life of the Jersey Shore from plankton to crabs, fish, reptiles and mollusks. You will also participate in several dissections. We’ll meet at Sandy Hook on Saturdays where you will participate in hands-on investigations of the park’s salt marsh, barrier beach, and maritime forest environments. This course will be taught by Ms. Diana Burich of the NJ Sea Grant Consortium at Sandy Hook. Classes will meet Saturdays from 9 am to 12 noon at Sandy Hook beginning October 3.

EXPLORE BIOTECHNOLOGY - 8TH GRADE

Explore Biotechnology is a lab intensive course that will give participants hands-on training in the use of the most common tools and technologies associated with the field of biotechnology. Students will learn and experiment with advanced, cutting-edge techniques such as DNA extraction, Polymerase Chain Reaction (PCR), and gel electrophoresis, which scientists frequently apply to the medical and agricultural fields. This course will be taught by Mr. David Fusco of Biotechnology High School. Classes will meet on Monday evenings from 6 to 8 PM beginning October 5.

OLYMPICS OF THE MIND - 7TH and 8TH GRADE

Creativity is the name of the game in this course! With your newly made friends, you’ll use your creativity and knowledge of physical science to create solutions to design challenges. For example, one challenge will be to build a memorial tower to commemorate the 150th anniversary of the founding of your town. You’ll need to design your tower out of a single sheet of copy paper. Winning towers typically reach heights greater than six feet! Another challenge is pulling your 5 year old daughter up out of a well using only wind power. Will your team win the challenge? This is your opportunity to innovate – to explore. This is Olympics for the mind! This course will be taught by Mr. John Valente of the Marine Academy of Science and Technology (MAST). Classes will meet on Monday evenings from 6 to 8 PM beginning October 5.

THE ENVIRONMENT AND YOU - 8TH and 9TH GRADE

In this informative and exciting class, you will learn how every aspect of your life is dependent upon the natural world. We will explore Whale Pond Brook on the Monmouth University campus, using waders to gather water samples and macro invertebrate samples. We will also delve into environmental problems such as pollution and global warming; problems that affect us locally and globally. We will come to appreciate how complex these problems are, both in their creation and in their solution. We will evaluate ways in which our modern society must change to ensure the future habitability of the Earth. Ultimately, students will become leaders in their families and in their communities to ensure a “greener” future for everyone. This course is taught by Mr. Marc Coe of Cedar Drive School in Colts Neck. Classes will meet on Saturday mornings from 9 -12 noon beginning October 3.