



Project Seahorse Biotechnology Summer Camp

August 9-13

Grades 6-8: 9:00 am - 12:00 noon

Grades 9-12: 1:00 - 4:00 pm

Fee: \$350 per student per camp; \$300 per student per camp with early registration by May 15

Location: Coyote Grange Hall, 8140 Monterey Road, Coyote, CA 95013

Schmah Science Workshops' summer camps EXPLODE the myth that science is dull. Our camp instructors are scientists and engineers who engage students' curiosity, imagination and creativity using a fun, hands-on approach. Students learn to apply the scientific process and core scientific principles, all while making exciting new discoveries. All workshops are taught by Molecular and Microbiologists.

Workshop Descriptions

Saving seahorses means saving the seas. Seahorse populations need to be preserved for ecological, biological, economic, and medical reasons. These fishes are important predators on bottom-dwelling organisms; removing them may disrupt ecosystems.

An estimated 24.5 million or 70 tons of seahorses are sold annually for use in Chinese medicine. Seahorses are a respected treatment for many symptoms including impotence, urinary incontinence, wheezing, abdominal pain, toxic swelling and debility in the elderly. After harvesting, the seahorses are bleached and treated in ways that removes any distinguishing marks, so the species is unknown. The population size, how different populations interact, and how genetically diverse the populations are, is also unknown.

Schmah Science Workshops is proposing a new research project using genetic markers to determine the species of seahorses found in Chinese medicine products. We will attempt to determine how many different types of seahorses are found in these products and students will learn common Molecular Biology techniques used in research for this analysis.

For more information contact Belinda Lowe-Schmah at (408) 281-7595 or bel@schmahscience.org

Visit our website at www.schmahscience.org

Schmah Science Workshops • 171 Branham Ln Ste 10-223 • San Jose, CA 95136

Day 1

Seafood chromatography: Students will examine the pigment from several varieties of seahorse using paper chromatography techniques.

Day 2

Isolating seahorse proteins: Students learn the theory behind, and techniques for isolating, proteins in animals.

Day 3

Viewing proteins on gel: Students learn to load a protein gel and interpret a complex band pattern. Different banding patterns are representative of different species of seahorses.

Day 4

Seahorse genome isolation and polymerase chain reaction (PCR): Students isolate seahorse genomes and learn PCR, a common molecular biology technique used to amplify genetic material.

Day 5

Viewing amplified DNA segments: Students practice loading a DNA gel and learn how to make connections between the DNA and protein banding patterns.

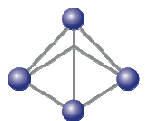
About Schmahl Science Workshops

Schmahl Science Workshops is a non-profit partnership of students, parents, teachers, scientists and engineers who come together to foster the innate curiosity and love of science that exists among children.

Founded in 1996 by a group of four children and their parents, Schmahl Science Workshops provides pre-K through 12th grade children an unmatched breadth of hands-on science workshops spanning biology, chemistry, earth science, forensics, math and physics. Our mission is to prepare children of all backgrounds for a future in which science and technology will drive every industry and vocation.

We believe that children are motivated to learn when their ideas are cultivated through the joy of designing and carrying out an experiment. Through these authentic research experiences, our workshops enable students to explore and invent what inspires them, and to develop the skills needed to achieve success in all areas of their lives.

March 2010
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Registration Form

Child's Name _____

Grade 2010-11 _____

Child's Name _____

Grade 2010-11 _____

Child's Name _____

Grade 2010-11 _____

Parent Name _____

Email _____

(For registration confirmation)

Address _____

City _____

Zip _____

Home Phone _____

Emergency Phone _____

Any Medical issues for child(ren) _____

Workshop Series	Students' Names	# of Students	Amount Due
Grades 6-8 Fee \$350 per student			
Grades 9-12 Fee \$350 per student			
Early registration discount:\$50 per student per camp			
Total due			

- **Mail registration to:** Schmahl Science Workshops, 171 Branham Ln Ste 10-223, San Jose, 95136.
- **Payment is due with registration. No refunds. No substitutions.** Send check or money order made out to Schmahl Science Workshops. Credit Card Payments: MasterCard, Visa, American Express (Circle One)
Card Number _____ Exp. Date _____ CID _____
Signature _____ Date _____
- Check here to be added to our mailing list of future workshops _____.
- Check here for information via email _____.
- SSW may take workshop photos for use in SSW's publicity. Names and locations will not be published. Check here if we have your permission to take photos of your children during our workshop(s)_____.
- How did you hear about us? _____

