



Valley Christian - Engineering - Fall 2018

Schmah! Science Workshops EXPLODES the myth that science is dull. Our instructors are talented scientists and engineers who engage students' curiosity, imagination and creativity using a fun, hands-on approach. Students learn to apply the scientific process as well as core scientific principles, all the while making exciting new discoveries.

Our young Engineers build musical instruments, roller coasters, bridges and vehicles.

9/11: Sound Science: Students participate in a musical acoustics workshop. Students learn about simple harmonics, standing waves, nodes and nulls, wavelength and amplitudes. Subjects covered are the following: sound travels in waves and is produced by vibrating objects; long = low pitch, short = high; pitch; sound intensity increases with amplitude; how to measure frequency. (Code 170)

9/18: Musical Instruments: Students explore the properties of sound by building Tooter Tubes and harmonicas using recycled materials. The resulting musical instruments create high and low pitches depending on the length of the materials. (Code 394)

9/25: Roller Coasters: Students work in groups to make a roller coaster with split foam tubes, marbles and tape. They discover amazing ways to get as many energy conversions as possible. This relates to potential and kinetic energy, friction, and inertia. (Code 35)

10/2: Egg Crash Dummies: Students design and build containers that can be used to experience and to explore the science of motion. Students use various materials and designs to protect the egg from the energy of a crash, how momentum is transferred into the egg. (Code 321)

10/9: Arch Bridges: Students apply the principles of force while creating an actual bridge without the use of glue or mortar. Once the keystone is assembled, the arch is actually strong enough for students to stand on. (Code 428)

About Schmah! Science Workshops

Schmah! 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, Schmah! Science Workshops provides pre-K through 12th grade children with 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. 2018 © Schmah! Science Workshops

DAY: Tuesday – 10 workshop course

GRADES: 3-5 | 3:10 - 4:10 pm

DATES: 9/11, 9/18, 9/25, 10/2, 10/9, 10/16, 10/23, 10/30, 11/6, 11/13

MAX STUDENTS: 25 Students- **FIRST COME, FIRST SERVE**

LOCATION: 1450 Leigh Ave., San Jose, CA 95125

10/16: Lights and Mirrors: Students use their reflections in plastic mirrors to discover how to make a million eyes, a "tunnel" through the desk, and how the "fun house" mirrors and periscopes work. Students explore properties of light including: wavelength, color and internal reflection. (Code 154)

10/23: Rubber Band Cars: Designing and constructing a car out of cardboard, dowels, balsa wood, and rubber bands can be quite challenging for children. Using only these limited materials, not only do they build their own cars, but they also learn in a direct way the engineering concept of optimization. (Code 305)

10/30, 11/6, 11/13: Popsicle Bridges: Students build a bridge spanning twelve inches that will hold 50 lbs. The bridge is to be made of only Popsicle sticks and glue. **TAKES THREE SESSIONS TO COMPLETE.** (Code 426)