A Schmahl Science Workshop

Schmahl Science Workshops, Inc.

Like children everywhere, the children at A Schmahl Science Workshop love science. And like children everywhere, they learn most when they are motivated, challenged and having fun. We are a partnership of students, parents, teachers, scientists and engineers who have come together to help foster this interest in science. We believe children are motivated to learn when their ideas are cultivated through the fun of designing and developing an experiment.

Inventions

Grades: 1 – 3:

Wednesdays, 9:30 - 10:30

Jan 20, 27; Feb 3, 10, 17; Mar 3,10,17,24,31 and Apr- 1,8

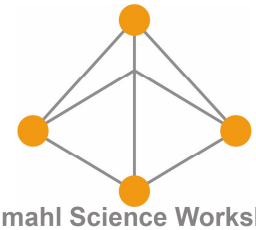
Calvary Church of Los gatos, 16330 Los Gatos Blvd, Los Gatos, Room C221

Fee: $180 per student

1. **Homemade Loudspeakers:** Students build homemade loudspeakers using ring magnets and plastic cups. While constructing the loudspeakers, students will learn about electromagnetism, the interaction of magnetic fields, and the mechanical amplification of sound.
2. **Periscopes:** Our Agilent Periscope project introduces students to the basic properties of reflection. They experiment with mirrors, reflecting geometric shapes and symmetrical words and images. The children will construct their own periscope and have a great time finding ways to apply the tool.
3. **Lighthouses:** Students assemble both house and lamp assemblies. With rays of light emerging from the sides of their houses, the children will set up experiments to discover properties of light including reflection, refraction, and conversion of light rays.
4. **Rollercoasters:** 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.
5. **Balloon Cars:** The focus of the student's work in this session is on the careful assembly of a balloon-powered car that provides a practical application of Newton's third law of motion. After they have completed their cars and considered the importance of axles, bearings, and symmetry they will have a lot of fun racing them around the room.
6. **Motor Cars:** Students build a battery-powered car by constructing a u-shape body. They then install the mechanism and race it down the hall!
7. **Mousetrap Cars:** Many products exist that can be improved. Indeed, technological innovation is often the result of improving on the works of others. Automotive engineers have carefully improved such areas as engine design and aerodynamics to achieve better performance and gas mileage. In this problem situation, the power source for a small toy car is a mousetrap. It is a simple idea with lots of room for improvement. Your Challenge - You are to redesign a mousetrap car so that it will travel the greatest distance possible.

8. **Rubberband 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 by testing different sized rubber bands and different diameter plates as wheels.
9. **Sundials:** Students build their own sundials and simulate the 'time shadow' created by the rotating Earth. The shape of the earth, their location on it and how a compass works are considered in the workshop.
10. **Deep Sea Divers:** The principles of flotation, air pressure and density are introduced in this activity. Students build their divers using balloons, paper clips, and weights and place them in a one-liter bottle for 'deep sea diving'. The session includes some measurement and data collection and produces great many questions for the students to take away with them.

11/12. Tissue Paper Hot Air Balloons (2 MEETINGS): The Situation: You are employed by Gore Industries, the leading manufacturer of ballooning supplies. You are a member of a materials engineering team. The company wants a new design to offer customers. This design must be durable yet offer high-flying capabilities.



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Child's Name_____ Grade 2009-10 _____

Child's Name_____ Grade 2009-10 _____

Child's Name_____ Grade 2009-10 _____

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**
Inventions			
Grades 1-3 ($165 per student)			
Charter School Invoicing Fee $5.00			
Total due			

- **Mail registration to:** A Schmahl Science Workshop, 171 Branham Lane, Ste. 10, PMB 223, San Jose, CA 95136.
- **Payment is due with registration. No refunds. No substitutions**. Send check or money order made out to A Schmahl Science Workshop. 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)_____.