



LASF and Science

LASF's science program is a dynamic and imperative component of your child's education. Through high-quality classroom instruction, LASF provides each elementary and intermediate school class with thought-provoking, hands-on science experience. Mini labs in each classroom support regular curricula through the presentation of a wide range high-interest, material-intensive units.

At the high-school level, LASF continues to enrich science education through equipment purchases and innovative programs, such as the outdoor classroom, that provide students with exciting learning opportunities.

Tell me, and I forget.
Show me, and I remember.
Involve me, and I understand.

About LASF

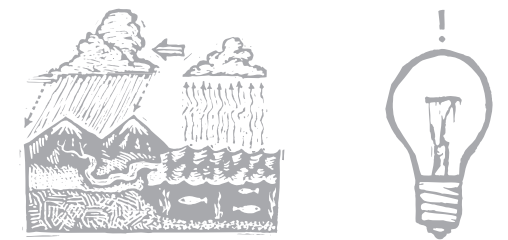
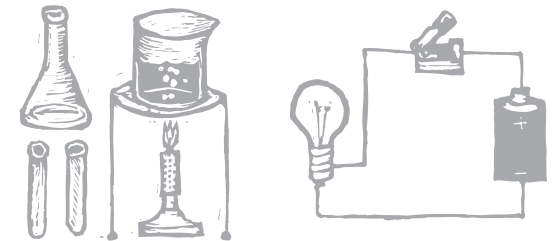
The Lafayette Arts & Science Foundation is a private, nonprofit educational foundation run by volunteers to benefit the children attending Burton Valley, Happy Valley, Lafayette and Springhill Elementary Schools, Stanley Middle School and Acalanes High School. Our mission: **to support and enrich the education of every child in the Lafayette public schools through a broad community-based effort.**

The 2005/06 school year marks the 25th anniversary of LASF. Since 1980, LASF has been providing core academic programs and educational enrichment to Lafayette students in partnership with our schools and our community.

Since LASF's humble beginnings, it has raised more than \$9 million to benefit our community's students and schools. Thanks in part to the Foundation's continuing support, Lafayette public schools today remain among the highest-ranked in California.



The Secrets of Science 2005/06



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Supporting and enriching the education of every child in the Lafayette public schools through a broad community-based effort

Kindergarten

The Senses: Students sharpen their observational skills by exploring their five senses and become more aware of their receptor cells and how they gather information about their environment [5 sessions].

First Grade

Living and Non-Living: Children learn to distinguish between living and non-living. They germinate seeds, observe brine shrimp, use a magnifying glass and keep a variety of records [3 sessions].

Tools of Science: Students are taught to correctly use a variety of science tools. Given materials to manipulate, students learn to compare masses, measure and observe, and record data [3 sessions].

What's the Matter?: Through hands-on activities, students will be able to demonstrate that all matter has mass, takes up space and can be described by its properties [3 sessions].

Second Grade

Science Ideas: Science questions are asked and students experiment to find answers. Children gain experience with the processes of science as they observe, estimate, predict, test, record and report their findings [4 sessions].

Oceanography: Students conduct experiments to illustrate properties of fresh and salt water and learn to recognize ways in which oceans affect land masses [4 sessions].

Exploring Our Earth: Students learn about the earth's crust through the study of rocks and their composition [3 sessions].

Energy and Machines: Students learn about the difference between potential and kinetic energy. Given the opportunity to experiment with several simple machines, students will be able to describe their functions and how these machines help us [4 sessions].

Third Grade

Optic Topics: Students are introduced to light and lenses. They observe how light can be reflected, refracted and diffracted using lasers, periscopes and light boxes, and dissect a lamb's eyes [3 sessions].

Biology: Students are introduced to the study of body systems by direct observation of animal body parts. They explore and learn about the function, adaptation and physical structure of animals [5 sessions].

Beginning Chemistry: Students experience the process of science as they learn about the phases of matter and the ways in which matter can change [4 sessions].

Fourth Grade

Life in a Drop of Pond Water: Students learn to use a compound microscope while gaining experience observing both living and non-living materials [3 sessions].



Magnetism and Electricity: Students learn and can demonstrate that unlike poles of a magnet attract and like poles repel, and that a magnetic field extends beyond the magnet itself and can attract through some objects. They will make simple circuits [4 sessions].

Geology: Students learn the differences between igneous, sedimentary and metamorphic rocks, and study minerals, geological processes and changes in the earth's surface [4 sessions].

Fifth Grade

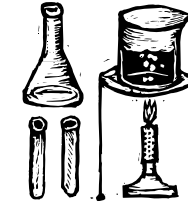
Physiology: Students study human anatomy. By direct observation and dissection of animal body parts, students explore and learn about the function and structure of the major body systems [7 sessions].

Chemistry I: Students learn to determine the mass, weight and density of a variety of materials, name common elements and compounds, and experiment with the different physical and chemical changes [5 sessions].

Highs and Lows: Students learn about weather as they build a model earth terrarium and chart its temperature variations over four weeks. They observe how different soils and land surfaces affect the earth's temperature and weather [4 sessions].

Sixth Grade

Chemistry II: Students learn to accurately describe the physical characteristics of common objects and gain experience in the importance of careful observation. They learn to separate the parts of mixture and test substances for their relative strengths as acids and bases [5 sessions].



Rocks and Crystals: Students learn to distinguish between igneous, metamorphic and sedimentary rocks by using thin sections and microscopes. They compare crystalline formations at different temperatures [3 sessions].

Harnessing Electrons: Students will demonstrate some of the effects of static electricity, understand how to make a series and parallel circuit using a switch of three or more lights, demonstrate the usefulness of certain materials as electrical conductors, resistors, rheostats or insulators, construct an electromagnet, and understand the importance of electromagnets in our lives [4 sessions].

Seventh Grade

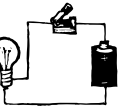
Microbiology: Students explore the world of microbiology through hands-on experience and new, interesting work with scientific tools [6 sessions].

Brain Study: Using a longitudinal half of a sheep brain, students work in pairs to label and identify regions in the brain and to understand their functions [1 session].

Heart Dissection: Students will experience dissecting and labeling a lamb's heart to aid in the understanding of the human circulatory system [1 session].

Eighth Grade

Electricity: Student expand their knowledge of electricity through the exploration of how electricity has been used in modern technology. They discover how electricity is generated, explore the concepts of resistance and conductivity, and learn about different types of circuits and electromagnets [6 sessions].



Optic Topics II: Students analyze and explore concepts pertaining to optics. Topics include waves, light, color, lenses and vision [5 sessions].

Mechanical Advantage: Classroom teachers have been provided with the curriculum and materials to teach mechanics to their students. With teacher input, LASF developed kits that contain incline planes, pulleys and levers that enhance classroom teaching. This year, an LASF grant has updated the materials for this class.

High School

LASF is working closely with Acalanes' Science department to review and **update equipment and supplies**. Specimens, a new set of microscopes, a new fiber-optic scope, and the equipment and supplies for all Biology and Chemistry classes were purchased with LASF funds.

In addition, LASF has funded the development of a **Riparian classroom** that provides students the opportunity to monitor a natural ecosystem.

...Plus, every year LASF parent volunteers organize and produce a **Science Fair** at each of the four elementary schools and, alternately, a **Science Fair** or **Rube Goldberg Competition** at Stanley. Don't miss the always innovative display of student science projects, visits by guest scientists and inspiring science activities.