

## Education Programs

### Fourth Grade - Physical Science

#### Program Type: Assembly

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Chabot Space and Science Center  
Oakland  
<http://www.chabot-space.org>

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##### ExploSciVe Science

<http://www.chabot-space.org/forms/chabot-to-go.htm>

**Grade Levels:** K;1st;2nd;3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th

Fire can be fun and educational! Explore the science behind this everyday occurrence that allows us to cook, drive cars, fly jets, and power cities.

Lawrence Hall of Science  
Berkeley  
[lawrencehallofscience.org](http://www.lawrence-hall-of-science.org)

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##### Solids, Liquids, and Gases Assembly @ School Site

[https://www.lawrencehallofscience.org/programs\\_for\\_schools/science\\_at\\_your\\_site](https://www.lawrencehallofscience.org/programs_for_schools/science_at_your_site)

**Grade Levels:** K;1st;2nd;3rd;4th;5th;6th;TK

From solid to liquid to gas (and sometimes back again), experiments and demonstrations introduce your students to the properties of matter and energy. They discover what happens when liquid nitrogen cools a gas to hundreds of degrees below zero, watch solids change directly into colorful gases, and see dry ice bubble into a mysterious fog.

##### Wizard's Lab on Wheels Festival @ School Site

[https://www.lawrencehallofscience.org/programs\\_for\\_schools/science\\_at\\_your\\_site](https://www.lawrencehallofscience.org/programs_for_schools/science_at_your_site)

**Grade Levels:** K;1st;2nd;3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th

From the LHS Wizard's Lab come dozens of hands-on science exhibits to illustrate principles of electricity; optics; sound; movement; and magnetism. Our staff performs exciting high voltage electricity demonstrations including the Van de Graaff electricity generator that stands hair on end! For our evening programs, we add a low-temperature show featuring amazing effects produced by liquid nitrogen.

##### Flames, Flares, and Explosions Assembly @ School Site

[https://www.lawrencehallofscience.org/programs\\_for\\_schools/science\\_at\\_your\\_site](https://www.lawrencehallofscience.org/programs_for_schools/science_at_your_site)

**Grade Levels:** K;1st;2nd;3rd;4th;5th;6th;7th;8th;TK

The science of fire is introduced with live demonstrations that illustrate the concept of combustion, how people first learned about fire, the fire triangle, magicians' tricks, controlling fire, what makes an efficient fuel, and fire prevention. This program is so hot it sets students' scientific curiosity ablaze. Topics: chemistry of fire, history of fire, safety, fire prevention.

#### Program Type: Family Science Night

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## Chabot Space and Science Center

Oakland

<http://www.chabotspace.org>

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### ExploSciVe Science

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**Grade Levels:** K;1st;2nd;3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th

Fire can be fun and educational! Explore the science behind this everyday occurrence that allows us to cook, drive cars, fly jets, and power cities.

## Children's Discovery Museum of San Jose

San Jose

<http://www.cdm.org>

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### Oh Seuss! Family Science Night

<http://www.cdm.org>

**Grade Levels:** K;1st;2nd;3rd;4th;5th

Do you know the science behind Seuss? Create a kite like Thing 1 and Thing 2 in *The Cat and The Hat*, construct a periscope to see across the land like Yertle the Turtle, build a maze to explore *Oh the Places You'll Go!*, and discover microscopic friends just like Horton in *Horton Hears a Who*. Explore the crazy contraptions and wacky adventures in these Dr. Seuss books and others!

- Staff Development: 45 minutes prior to the event
- Event: 1.5 hours on a weekday evening
- Total Time: 3.0 hours, 5:00 p.m. to 8:00 p.m.
- Materials for 10 interactive science activities promoting hands-on experiences focusing on the theme of your choice
- A 45-minute training for parents and teachers
- Staff support throughout the event
- Curriculum materials for teachers to use in their classroom

Your School Provides

- 12 adults to be trained as facilitators for the event
- A large open room, such as the school cafeteria
- 11 tables; 10 for interactive stations, and 1 small table for sign in

## Lawrence Hall of Science

Berkeley

[lawrencehallofscience.org](http://www.lawrencehallofscience.org)

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## Program Type: Field Trip

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Calpine Geothermal Visitor Center  
Middletown

<http://www.geysers.com>

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### Geothermal Power Plant Tour

<http://geysers.com/Visitor-Center-and-Tours>

**Grade Levels:** K;1st;2nd;3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th

The first geothermal power plant in the nation began generating electricity at The Geysers in 1960. Geothermal power is clean, reliable, and renewable. Special hands-on exhibits include three-dimensional displays exploring geothermal geology, well drilling technology, how geothermal and natural gas power plants work, and a topographical model of The Geysers showing the location of each of the power plants now in operation there. Other exhibits reveal the fascinating history of The Geysers, and explain the wastewater-to-electricity project in Lake County.

Chabot Space and Science Center  
Oakland

<http://www.chabotspace.org>

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### Destination Universe

<http://www.chabotspace.org/forms/school-field-trips.htm>

**Grade Levels:** K;1st;2nd;3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th

Take a journey from our Sun to the farthest reaches of the cosmos! Along the way, you'll see where stars are born, how they die, meet nebulae of all kinds, and travel to distant galaxies. Experience the Origins Theater; crawl into a black hole; see what happens when galaxies collide; and view stunning space images!

### Tapping the Wind

<http://www.chabotspace.org/forms/school-field-trips.htm>

**Grade Levels:** 4th;5th;6th;7th;8th

An Energy Investigation. Let's take a close look at wind energy and its potential to meet the growing global demand for electricity. On a list of the top ten future sources of energy compiled by a leading energy and climate scientist, wind energy has been identified as the number one choice as an important renewable energy solution. It is an ancient and proven technology that continues to be made more efficient. Students will be introduced to wind turbine features and how they work. After getting some basic principles about this technology, student teams will embark on an inquiry lesson, having access to the necessary materials to design, build, and test their experimental wind turbine blade designs using a simulated wind tunnel. They will measure the energy output of their models with voltage meters in order to compare the efficiency of their designs. Data will be entered into an active class spreadsheet. Students will experiment with variables such as the length, weight, number of blades and blade angles. They will be encouraged to modify their designs for further efficiency based on their measured electrical energy outputs. The class will conclude with a review of their results, identifying factors that they considered to be important in their wind turbine construction.

### Creatures of the Dark

<http://www.chabotspace.org/forms/school-field-trips.htm>

**Grade Levels:** K;1st;2nd;3rd;4th;5th;6th;7th;8th;TK

Can you guess which animals work 24 hours a day, 7 days a week... in the dark? Would you like to design and conduct your own experiment with some of the most important creatures on Earth? YES, of course! In this workshop, students will explore the world of decomposers and learn how they improve life for us here on earth by recycling and repurposing dead plants and animals into nutrient-rich soil.

## Children's Creativity Museum

San Francisco

<http://creativity.org/>

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### Music Video

<https://creativity.org/visit/fieldtrips/>

**Grade Levels:** 3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th

Students produce music videos featuring their own original poetry and music. Before and during the field trip, students engage in each step of the process, working in groups to decide on a concept, create original spoken word poetry, digitally compose their own music, coordinate dance routines, and perform and film the final product.

Students draw upon their literacy skills to create spoken word poetry and math skills to arrange rhythm patterns. They also expand their technical knowledge using cutting-edge music composition tools. The result is a fusion between art and technology that introduces students to the production process.

The music video workshops can help students authenticate learning, visualize abstract concepts, and develop confidence with technology. The video production project can be used as a platform to enhance your classroom curriculum. For example, the topic of the poetry and music can be based on a story or play, represent a scene from history, illustrate a scientific discovery, or convey any concept or idea.

## CuriOdyssey

San Mateo

<http://www.curiodyssey.org/>

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### Green Energy

<https://curiodyssey.org/schools-groups/>

**Grade Levels:** 3rd;4th;5th;6th

How do wind generators work? How do biologists and engineers work together to create a sustainable future? In this class we investigate how electricity is generated and the pros/cons of these methods. We will explore the nuts and bolts of wind power and the environmental concerns posed to bird populations, all while building a working wind generator capable of powering an LED! 1.5 hour class includes a visit from a live bird. 50 or 90 minutes

## Exploratorium

San Francisco

<http://www.exploratorium.edu>

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### Bechtel Gallery 3: Seeing and Listening

<https://www.exploratorium.edu/visit/galleries>

**Grade Levels:** K;1st;2nd;3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th

Experiment with light and vision, sound and hearing, and motion and spatial perception. Our eyes and ears respond to light and sound waves, but these are just the first steps in perceiving the world. Playing with light and sound is the best way to learn how they work. Investigating real phenomena can also give you a deeper understanding of the scientific process.

### Fisher Bay Observatory Gallery 6: Observing Landscapes

<https://www.exploratorium.edu/visit/galleries>

**Grade Levels:** K;1st;2nd;3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th

Explore the local environment. Natural and human forces interact to create the dynamic landscape surrounding us. Learn to uncover the stories embedded in a place by directly observing the geography, history, and ecology of the San Francisco Bay region.

### Gallery 2: Tinkering

<https://www.exploratorium.edu/visit/galleries>

**Grade Levels:** K;1st;2nd;3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th

Think with your hands. Making things and developing ideas by hand helps us construct understanding. Slow down, settle in, and make something personally meaningful—from playful contraptions to surprising connections between mechanical systems and natural phenomena.

Outdoor Gallery: Open your senses to this place by the Bay.

<https://www.exploratorium.edu/visit/galleries>

**Grade Levels:** K;1st;2nd;3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th

Investigate forces shaping the City, Bay, and region. Watch shifting winds and tides, reveal hidden life, shake a bridge, observe human behavior, and find new ways to notice the places we inhabit.

Gallery 4: Living Systems

<https://www.exploratorium.edu/visit/galleries>

**Grade Levels:** K;1st;2nd;3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th

Investigate the living world. Sometimes life is hard to observe, because it's too tiny or fast or is hidden underground or in the ocean. Discover what you've been missing: use scientific tools to investigate living things of different sizes, the ecosystems they inhabit, and the processes they share.

Folsom Powerhouse

Folsom

[http://www.parks.ca.gov/default.asp?page\\_id=501](http://www.parks.ca.gov/default.asp?page_id=501)

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Powerhouse Tour

[http://www.parks.ca.gov/default.asp?page\\_id=501](http://www.parks.ca.gov/default.asp?page_id=501)

**Grade Levels:** K;1st;2nd;3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th

Visitors touring the powerhouse can see the massive General Electric transformers, each capable of conducting from 800 to 11,000 volts of electricity, in addition to the forebays and canal system that brought the water from the dam. There is also a downloadable unit on electricity on the website.

Great America Theme Park

Santa Clara

<http://www.cagreatamerica.com/>

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Class Trip to Great America

[http://www.cagreatamerica.com/groupsales/groups\\_youth\\_events.cfm](http://www.cagreatamerica.com/groupsales/groups_youth_events.cfm)

**Grade Levels:** K;1st;2nd;3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th

Paramount Great America in Santa Clara is a 100-acre theme park, offering the Bay Area's best collection of roller coasters, heart-pounding thrill rides and live, dazzling stage shows. Park opens 10 am, turnstiles open at 9:30,

Lawrence Hall of Science

Berkeley

[lawrencehallofscience.org](http://lawrencehallofscience.org)

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Self-Guided Visit

[https://www.lawrencehallofscience.org/visit/field\\_trips](https://www.lawrencehallofscience.org/visit/field_trips)

**Grade Levels:** K;1st;2nd;3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th

Take your students to the Lawrence Hall of Science to enjoy the exhibits.

Fantastic Gas Class -Workshop

[https://www.lawrencehallofscience.org/visit/field\\_trips](https://www.lawrencehallofscience.org/visit/field_trips)

**Grade Levels:** 3rd;4th;5th;6th;7th;8th

Age Appropriate Activities per Grade Level Group. Students create and carry out their own experiments with dry ice as they discover its properties. Enthusiasm is high, as bubbling and fog-forming experiments are invented by students around the lab and they try to answer the question "What is dry ice made of?" The class ends with a bang as the instructor demonstrates tests, including flammability, on a variety of gases. topics: phase change, experimental design.

## Ingenuity Lab: Engineering with Turbines

[https://www.lawrencehallofscience.org/visit/field\\_trips](https://www.lawrencehallofscience.org/visit/field_trips)

**Grade Levels:** 3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th

Students employ engineering practices as they tackle a targeted design challenge to optimize a wind turbine to generate electrical current. This experience focuses on students defining problems, designing and evaluating solutions, and taking the time to assess, discuss, and redesign as they innovate..

\*Offered at the Hall in May and June

## Math Science Nucleus

Fremont

<http://www.ms-nucleus.org>

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### Light Magic

<http://www.ms-nucleus.org/classes/fieldnucleus.htm>

**Grade Levels:** 3rd;4th;5th

Can you change the way that light moves? What is a hologram? How is light different colors? Students will bounce light off mirrors, and learn about optical illusions. Students experience the power of lasers and receive a hands lens

Third Grade: Physical Sciences (2a,b,c,d)

## Randall Museum

San Francisco

<http://www.randallmuseum.org/>

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### Renewable Energy - Randall Museum

<http://www.randallmuseum.org/>

**Grade Levels:** 3rd;4th;5th;6th

Learn about the different ways we can fuel our society. Create circuits and generate electricity with the forces of wind, the sun, and water.

## Rock-It Science

Santa Clara

<https://rockitscience.com/>

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### Fieldtrip to Rock-it Science's Classroom

<http://rockitscience.com/fieldtrips/>

**Grade Levels:** K;1st;2nd;3rd;4th;5th

Our laboratory is a delight for students of all ages. There are machines to make lightning bolts with a flash and a bang! There is a Tesla Coil to create streams of purple sparks 6 feet wide. There is a giant, medieval-style crossbow, a castle tower, robots, and huge magnifying lenses that can melt a penny in 30 seconds!

Choose from activities: <http://rockitscience.com/fieldtrips/#experimentlist>

## TeacherBus

<http://www.teacherbus.com/about.html>

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### Field Trips Using Biodeisel Bus

<http://www.teacherbus.com/about.html>

**Grade Levels:** K;1st;2nd;3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th

The Teacher Bus is a biodeisel bus you can rent for your classroom to take you on a fieldtrip. Peter is a former teacher who can provide educators to lead a program of your choosing on the bus. BE SURE TO ASK FOR EDUCATOR RATES.

## The Crucible

Oakland

<http://thecrucible.org/about-us/contact-us>

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### field Trips

<http://thecrucible.org/youth-program/field-trips>

**Grade Levels:** K;1st;2nd;3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th

The Crucible provides youth with an introduction to the industrial arts with demonstrations by artists and industry experts. These field trips support learning in areas such as mathematics, science, art, and world culture. Participants learn about the processes, tools, materials and applications of industrial arts and are inspired to make connections between arts and science. The Crucible staff works closely with educators to ensure that these kids activities are a meaningful and exciting educational experience. The field trip program is available the third Thursday of each month for one-hour tours during the hours of 9AM and 2PM. No cost to Oakland public schools. For private schools in Oakland or schools outside of Oakland, charge is \$4.00 per student. Groups must contain at least 60 youth for a field trip, and students are divided into three groups to ensure participants experience the demonstrations in small groups.

## The Tech Museum of Innovation

San Jose

<http://www.thetech.org>

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### Life Tech Gallery

<http://www.thetech.org>

**Grade Levels:** 3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th

Explore the innovative ways technology allows us to see, hear, quantify, record and model the human body: from seeing your heat image in a thermograph to taking a fly-through anatomy trip in "Visible Human". Examine the exciting applications and compelling issues of biotechnology. See the 16-foot DNA spiral sculpture and explore how advances in genetics and biological science affect our lives. Human habitation in diverse environments, properties of light, energy, matter, physiology, genetics, DNA, science

### Physics of Rollercoasters

<http://www.thetech.org>

**Grade Levels:** 2nd;3rd;4th;5th;6th;7th;8th

Students design their own roller coasters to learn how engineers prototype and build machines. They also explore kinetic and potential energy, friction and Newton's 1st and 2nd Laws of Motion.

### Green by Design - Lab

<http://www.thetech.org>

**Grade Levels:** 3rd;4th;5th;6th;7th;8th

To discover how to harness solar energy, students learn about circuit design, nanotechnology, and solar panels. They then plan and prototype a solar-powered city.

## Program Type: In-Class Program

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### Chabot Space and Science Center

Oakland

<http://www.chabotspace.org>

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### Tapping the Wind

<http://www.chabotspace.org/forms/chabot-to-go.htm>

**Grade Levels:** 4th;5th;6th;7th;8th

Calling all engineers! We need your help to design more efficient wind turbines to help meet the global demand for clean, renewable energy. Tied closely to both the NGSS Engineering and Energy standards, this class allows students to work in engineering teams to design, construct, test, and optimize their own wind turbine blades. The future of renewable energy is in their hands!

CuriOdyssey  
San Mateo

<http://www.curiodyssey.org/>

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Green Energy

<https://curiodyssey.org/schools-groups/>

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How do wind generators work? How do biologists and engineers work together to create a sustainable future? In this class we investigate how electricity is generated and the pros/cons of these methods. We will explore the nuts and bolts of wind power and the environmental concerns posed to bird populations, all while building a working wind generator capable of powering an LED! 1.5 hour class includes a visit from a live bird. 50 or 90 minutes

Mad Science - Mt. Diablo  
Concord

<http://www.madscience.org/locations/mtdiablo/>

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Watts-Up!

<http://www.madscience.org/locations/mtdiablo/WorkshopsGradesK5.aspx?sm=14033>

**Grade Levels:** 2nd;3rd;4th;5th

Learn about electricity, its properties and its role in natural phenomena. Make indoor lighting while conducting hair-raising experiments with an electro-static generator

Oakland Zoo  
Oakland

<http://www.oaklandzoo.org>

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School ZooMobile - "Poop – the Best Gift Ever!" - Animal Digestion, Energy, & Food Webs

[http://www.oaklandzoo.org/ZooMobile\\_Community.php](http://www.oaklandzoo.org/ZooMobile_Community.php)

**Grade Levels:** 4th;5th

Some call it waste, some call it poop, and some call it words we like to keep out of school. Still the importance of "it" to the ecosystem is undeniable. Discover the many ways we can learn about animals from their scat, and how animal digestion, the resulting feces and a wide variety of decomposers keep the world's food web alive and healthy.

Rock-It Science  
Santa Clara

<https://rockitscience.com/>

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In-class Programs for Schools in Silicon Valley

<https://rockitscience.com/inschoollessons/>

**Grade Levels:** K;1st;2nd;3rd;4th;5th;6th;7th;8th

A variety of topics are offered. Each science lesson lasts 45-60 minutes. The classroom teacher observes the lesson and participates if they wish. Our instructors can teach up to 40 students at a time (up to 30 for kindergarten).

## Program Type: Overnight Program

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Slide Ranch

Muir Beach

<http://www.slideranch.org>

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### Overnight Program at Slide Ranch

<http://www.slideranch.org>

**Grade Levels:** 4th;5th;6th;7th;8th;9th;10th;11th;12th

Overnight Program. The curriculum follows an experiential learning model. Through hands-on learning, teamwork and physical activity, the children develop a stronger sense of self, respect for the natural environment, and are given tools with which to make decisions and choices about healthy food and healthy living. The theme of food is used as the universal springboard to teach about an appreciation for the people who grow and raise the food, the soil in which it is grown, the animals that provide food, and the importance of composting and recycling. When children make a sensory, positive connection with the natural environment and healthy food, the experience transforms their general approach to the outdoors, nutrition, health and themselves.