Education Programs

3rd Grade Physical Science

Program Type: Assembly

Lawrence Hall of Science
Berkeley
lawrencehallofscience.org

Wizard's Lab on Wheels Festival @School 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.

Build, Engineer, Invent! @School Site
https://www.lawrencehallofscience.org/programs_for_schools/science_at_your_site

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

Explore the exciting world of construction and design as you build, engineer, and invent! This hands-on design challenge experience brings out the engineer and architect in everyone. Explore building in two and three dimensions while discovering the design properties involved in constructing giant structures, bridges, rockets, and more! All the while you will explore how engineering plays a huge role in the world we live in. We bring the building materials; you bring the creativity!

Electrifying Science "The Magic" of Electricity Assembly @School Site
https://www.lawrencehallofscience.org/programs_for_schools/science_at_your_site

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

Experience science so electrifying that it literally makes students' hair stand on end! Marvel and join in as electricity levitates objects in midair, sets them ablaze, or lights them up from across the room. And look out when the lightning flies in our _shock-tacular_ high-voltage finale! Sessions are adapted to audience's grade level(s). For an additional $125, more lighthearted 25-minute sessions for grades K–1 may be added to programs at your site.

Program Type: Family Science Night

Children's Discovery Museum of San Jose
San Jose
http://www.cdm.org

Air We GO!
http://www.cdm.org

Grade Levels: K;1st;2nd;3rd;4th;5th
Although you can’t see it, air is all around you; pushing, flowing and moving. Explore ten different activities to find out some of the things that air does. Use air power to make things fly or hover, examine local air samples and experiment with the mighty force of air. Children’s Discovery Museum provides:

- 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

Science in Wonderland
http://www.cdm.org

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

The story of Alice’s Adventures in Wonderland inspires exploration, curiosity, and adventures in an amazing new world. In this theme experiment with volume at the Tea Party, scale and measurement in the Hall of Doors, and the physics of motion at the Croquet Ground. Inspire your curiosity while exploring Wonderland. Children’s Discovery Museum provides:

- 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

**Toy Box Physics**
http://www.cdm.org

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

Did you know that there is science hidden in your toy box? Explore simple machines and other cool concepts as you design a windmill pinwheel, build a springboard catapult, and create a Wibbly Wobbly that uses inertia and momentum to get along! Children’s Discovery Museum provides:

- 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

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- A large open room, such as the school cafeteria
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**Science Magic**
http://www.cdm.org

**Grade Levels:** K;1st;2nd;3rd;4th;5th
Find out the surprising science secrets behind some of the world’s popular magic tricks. Make a paperclip levitate using magnetic force. Use a wand of static electricity to command a spinning straw and a floating butterfly. Watch as water defies gravity and students perform science magic tricks that will amaze their family and friends! Children’s Discovery Museum provides:

- 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

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Secret Agent Science

http://www.cdm.org

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

Become a science detective who uncovers clues and follows great leads! Gather all the tools and knowledge needed to lift fingerprints, analyze handwriting, track footprints, and extract DNA. With your spy glass and cipher wheel, you can solve the world’s mysteries! Children’s Discovery Museum provides:

- 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
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Gadgets in Motion!

http://www.cdm.org

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

Explore the physics of motion using fun, creative gadgets. Escaping air causes a propeller to spin. A single marble uses momentum to move a mountain of marbles. Straws and paper transform into a launching rocket. Children and parents will look at science in a new way as they explore the ways things move! Children’s Discovery Museum provides:

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Super Powers!

http://www.cdm.org

Grade Levels: K;1st;2nd;3rd;4th;5th
Discover the science secrets behind your super hero’s special powers. Shazam… and you learn about potential and kinetic energy. Test your reaction time to see if you are Faster than a Speeding… Create a super hero who uses friction to climb Up, Up, and Away. Experiment with elasticity In a Single Bound and create a Bionic Ear to test your new-found hearing. Enjoy these super science adventures! Children’s Discovery Museum provides:

• 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
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Amusement Park Science
http://www.cdm.org

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

The spins, drops, and twists of amusement parks have thrilled both kids and adults for ages. But, how often do we take the time to think about the science involved in the loop-de-loops of roller coasters, the vertical motion of the carousel, and the wackiness of Fun Houses? In this newest family science night theme, children and parents together will explore gravity as they create miniature roller coasters, experience the power of springs as they make their own pinball machines, and test their strength while learning about air and water power.

Children’s Discovery Museum provides:
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Grade Levels: K;1st;2nd;3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th

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Program Type: Field Trip

American River Water Education Center
Folsom
http://www.usbr.gov/mp/arwec/

Education Center Tour
https://www.usbr.gov/mp/arwec/plan-your-fieldtrip.html
**Grade Levels:** 2nd;3rd;4th;5th;6th;7th;8th
The history and headwaters of the American River Watershed are explored through interactive exhibits which focus on this integral part of California's waterworks. Find out where the American River actually starts. Discover just how much water is needed to make a pair of jeans or grow a tomato. Water management and conservation are critical issues today and are stressed with fun 'hands on' demonstration areas and displays. A section on Folsom Dam explains why it was built, it's dynamic history over the past 50+ years and the dam's many uses.

Bay Area Discovery Museum
Sausalito
http://www.baykidsmuseum.org/

Discover-It-Yourself Visits
https://bayareadiscoverymuseum.org/educators
**Grade Levels:** K;1st;2nd;3rd;PK;TK
seven exhibitions are research-backed and provide STEM-focused, inquiry-driven experiences that help children develop creativity and creative problem solving skills. Look out Cove, Art Lab, Fab Lab, Imagination Playground, Bay Hall, Tot Spot, and a changing exhibit hall

Calpine Geothermal Visitor Center
Middletown
http://www.geysers.com

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

Mars Exploration
http://www.chabotspace.org/forms/school-field-trips.htm
**Grade Levels:** 3rd;4th;5th;6th;7th;8th
Did you know that NASA is planning to send human explorers to Mars in the 2030’s? Your students are in the perfect age range to be among the first to colonize the Red Planet! After an interactive briefing about Mars and the challenges of landing there safely, student engineering teams will design and construct a stable landing apparatus and test multiple solutions to meet the criteria for a successful Mars landing.
One Giant Leap: A Moon Odyssey
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 simulated Moon-walk, try on a space helmet, climb into a Mercury capsule, and land a lunar module! The exhibit explores legends and science fiction about the Moon; the Space Race and the Moon landings; and the Earth-Moon system. Learn what the Moon is made of, how it affects the Earth, what causes Moon phases, gravity on the Moon, and more. You can even take a look at an ancient piece of the Moon up close! The exhibit includes space artifacts and replicas, from Sputnik and Mercury to Gemini and Apollo.

Children's Discovery Museum of San Jose
San Jose
http://www.cdm.org

**Seld Guided Field Trips**
http://www.cdm.org
**Grade Levels:** K;1st;2nd;3rd;4th;5th;6th;7th;8th;PK;TK
Enjoy the hands-on exhibits including: Art Gallery, Art Loft, Bill's Backyard, Bubbles. Mammoth Discovery, Rainbow Market, Secrets of Circles, Streets, Water Ways, Wonder Cabinet, and the changing exhibit

CuriOdyssey
San Mateo
http://www.curiodyssey.org/

**Build It and Break It! - Field Trip**
https://curiodyssey.org/schools-groups/
**Grade Levels:** 1st;2nd;3rd
Build a wooden bridge and a paper tower, then test their strength until they collapse. Students will explore gravity, stress, and other forces that engineers have to overcome (or utilize) every time they construct a bridge or building. Let's learn together as we build and break our very own structures.
Also available as an in-class program.

Exploratorium
San Francisco
http://www.exploratorium.edu

**Tinkering Studio**
http://tinkering.exploratorium.edu/about
**Grade Levels:** K;1st;2nd;3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th
A studio workshop for playful invention, investigation, and collaboration
The Tinkering Studio is an immersive, active, creative place at the Exploratorium where museum visitors can slow down, become deeply engaged in an investigation of scientific phenomena, and make something—a piece of a collaborative chain reaction—that fully represents their ideas and aesthetic.
In the Tinkering Studio, visitors are invited to explore a curiosity-driven exhibit, chat with a featured artist, or investigate a range of phenomena with staff artists, scientists, educators, and others by participating in a collaborative activity. A large, eclectic assortment of materials, tools, and technologies are provided for people to use as they explore and create.

**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.

Eletricity and Magnetism
http://www.exploratorium.edu
**Grade Levels:** 3rd;4th;5th
Guided Pathways are intended to be a set course for teacher-led exploration in the museum. Each Pathway includes a student worksheet and a matching teacher's edition. The teacher's edition links the Pathway's content to state science standards and provides additional support materials as well as sample answers to the worksheet questions (www.exploratorium.edu/pathways/index.html). The Magnetism Guided Pathway spotlights these exhibits: Black Sand, Visible Magnetic Domains, Magnetic Spinner, Magnetic Clouds, Magnetic Tightrope, Floating in Copper. The chemistry topics reviewed teach the chemical and physical properties of metals.

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**Folsom Powerhouse**
Folsom

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

**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.

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**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

**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.

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**Hiller Aviation Museum**
San Carlos

http://www.hiller.org

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**Flight Simulator Lab**

https://www.hiller.org/learn-and-discover/school-field-trips/

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

Enter the Museum’s Flight Sim Zone, where every student has the opportunity to control a simulated airplane through several realistic, age-appropriate missions. Using state-of-the-art flight simulation equipment and software, students work in pairs to master aircraft control while flying through a beautiful reproduction of the Bay Area and other locations worldwide.

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**Flight and Motion**

https://www.hiller.org/learn-and-discover/school-field-trips/

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

Investigate the forces of flight while building and flying a model glider! Primary students explore lift, thrust, drag and gravity, while elementary and above construct flight controls to change the attitude of their flying model aircraft.

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**Amazing Aircraft I - Field Trip**

https://www.hiller.org/learn-and-discover/school-field-trips/

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

Our most popular hands-on program! Learn the different kinds of aircraft and identify the parts of an airplane before building and flying a simple balsa glider. Grades 4-5 add control surfaces to guide their glider’s flight. It's an adventure in aviation!

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**Teacher-Led Field Trip**

http://www.hiller.org

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

Teachers are provided with field trip guides, students get "flight plans" for interesting, challenging and engaging learning activities based on the displays and exhibits in the museum. The gallery includes full size models, interactive hands-on displays and multimedia presentations. Visitors can look into the restoration workshop, to see future museum models. Science topics include air density, sound, force, pressure, and the forces of flight, including thrust, lift, gravity, and drag.
Amazing Aircraft II - Field Trip
https://www.hiller.org/learn-and-discover/school-field-trips/
**Grade Levels:** 3rd;4th;5th;6th;7th;8th
Take flight with a rubber-powered airplane! Recommended for older students, Amazing Aircraft II features construction and flight of a larger, propeller powered balsa airplane. Grades 4-8 add control surfaces to guide their airplane’s flight. Launch into the amazing world of aircraft!

Dream of Flight Gallery Tour
https://www.hiller.org/learn-and-discover/school-field-trips/
**Grade Levels:** 2nd;3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th
People have longed to fly for thousands of years. Join the quest for flight in a sweeping overview of the Museum’s collection. See groundbreaking creations, historic advances and paths not taken. Encounter aircraft that have helped to change the world and learn about the people who built and flew them in an exploration of the Museum’s many exhibits. Led by knowledgeable staff and volunteers, tours normally start in the Museum’s Atrium and last approximately 30 minutes. Each field trip group may request any one tour below. There is no additional fee for guided tours, they are included as part of group or field trip admission. Following the tour, field trip groups will have a minimum of 20-30 minutes free exploration time to investigate exhibits more closely under the supervision of a teacher or chaperone. Popular exhibits include our Gallery-level flight simulators, aircraft cockpits, and the 747 exhibit.

Storm Chasers
https://www.hiller.org/learn-and-discover/school-field-trips/
**Grade Levels:** 3rd;4th;5th;6th;7th;8th
Explore how weather affects flight in a challenging foul-weather flight simulation. Discover thunderstorms and other weather hazards and how they affect aircraft, and then enter the Flight Sim Zone to embark on a realistic mission into inclement conditions. It’s a thrilling adventure to the edge of aviation!

Introduction to Aviation
https://www.hiller.org/learn-and-discover/school-field-trips/
**Grade Levels:** 3rd;4th;5th;6th
Combine the best of two programs and explore aviation from every angle! Students conduct a hands-on inspection of a real airplane, build a flying model glider and try their hand flying a small airplane in the Flight Sim Zone. It’s an all-inclusive aviation experience!

Wright Flight - Field Trip
https://www.hiller.org/learn-and-discover/school-field-trips/
**Grade Levels:** 3rd;4th;5th;6th;7th;8th
Discover the history of Wilbur and Orville Wright and their unprecedented scientific adventure to invent the world’s first airplane. Examine a full-scale recreation of their 1903 Flyer and build a beautifully detailed flying model to help take the excitement of the first flight home.

Intel Museum
Santa Clara
http://www.intel.com/museum/visit.htm

Museum Tours Intel Museum
http://www.intel.com/about/companyinfo/museum/info/ed-programs.htm
**Grade Levels:** K;1st;2nd;3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th
Students learn about Intel microprocessor history, silicon chip design, and chip fabrication. Museum staff guide students through the complex world of silicon technology to help them understand how Intel is changing the way we live, work, and play. Interactive exhibits encourage students to explore concepts in a fun and educational manner. These two-hour tours can be tailored for specific grade levels, including educational classes in the Learning Lab. Programs are available for grade 2 and higher.

Classes offered:
- Binary (recommended for Grade 2)
- Conductivity (recommended for Grade 3)
- Circuitry (recommended for Grades 4-5)
- Puzzle Ball (recommended for Grades 6-12)
Rocket Science
http://www.juniorcenter.org/programs/field-trips/
Grade Levels: K;1st;2nd;3rd;4th;5th;6th
Experiments with air pressure allow students to hypothesize and compare results. Students work in teams to build and launch water rockets which can fly as high as 70 feet. 20 students maximum for grades K-2; 32 student maximum for grades 3-8. Can also be presented in classroom.

Lawrence Hall of Science
Berkeley
lawrencehallofscience.org

Self-Guided Visit
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.

Ingenuity Lab: Linkage Lab
https://www.lawrencehallofscience.org/visit/field_trips
Grade Levels: 3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th
Students are introduced to engineering as they explore the roles of force and motion in designing mechanisms that move in specific ways. Using two-dimensional mechanical linkages, they create mechanisms with various inputs and outputs, then they use what they have learned to design their own projects.
*Offered at the Hall December and January.

Ingenuity Lab: Engineering Artbots
https://www.lawrencehallofscience.org/visit/field_trips
Grade Levels: 3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th
Students are introduced to engineering, circuitry, and motion as they go through iterative prototyping to design, build, and test LEGO artbots. They observe and compare how their motorized contraptions perform and discuss their design process.
*Offered at the Hall in March and April

Circuit Solutions
https://www.lawrencehallofscience.org/visit/field_trips
Grade Levels: 3rd;4th;5th;6th;7th;8th
electricity in electrochemical cells or from solar cells. Hair-raising static electricity experiments with a Van de Graaff generator "generate" excitement in your class, and powerful transformers spark a memorable high voltage finale.

Ingenuity Lab: Engineering with Turbines
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

Ingenuity Lab: Engineering with Hydraulics
https://www.lawrencehallofscience.org/visit/field_trips
Grade Levels: 3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th
Students are introduced to engineering and properties of fluids as they envision and build a hydraulic contraption. This experience focuses on students' defining problems, designing and evaluating solutions, and taking the time to assess, discuss, and redesign their creations. Their projects are recycled for the next group, but students take the experience and ideas home with them.
*Offered at the Hall October and November.
Marina Education Programs - City of Berkeley
Berkeley
http://www.ci.berkeley.ca.us/ContentDisplay.aspx?id=11922

Adventure Playground
http://www.ci.berkeley.ca.us/contentdisplay.aspx?id=8656
Grade Levels: 2nd;3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th
The Adventure Playground at the Berkeley Marina was opened in 1978. It is a wonderfully unique outdoor facility where staff encourage children to play and build creatively. Come climb on the many unusual kid designed and built forts, boats, and towers. Ride the zip line or hammer, saw, and paint. By providing these low risk activities Adventure Playground creates opportunities for children to learn cooperation, meet physical challenges and gain self confidence.

Math Science Nucleus
Fremont
http://www.msnucleus.org

Physics of Toys
http://www.msnucleus.org/classes/fieldnucleus.htm
Grade Levels: 1st;2nd;3rd;4th
Students learn basic principles of gravity, electromagnetism, and mechanics. They will be entertained with toys through history. Activities include working with various toys and will be asked to design and make their own toy.

Electricity
http://www.msnucleus.org/classes/fieldnucleus.htm
Grade Levels: 3rd;4th;5th;6th
Students are electrified with static and current electricity. They learn the difference between series and parallel circuits. Students can see first hand how this vital form of energy charges the world.

Mission Science Workshop
San Francisco
http://www.missionscienceworkshop.org/

Academic Field Trip to Mission Science Workshop
http://www.missionscienceworkshop.org/programs.html
Grade Levels: K;1st;2nd;3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th
Teachers from the surrounding public schools bring their classes, K-12, during the school day for one hour-forty-minute workshops in areas of their curriculum. The visit is typically divided into two parts: the “lesson” or curriculum-based investigation itself, and an exploration time in our mini-exploratorium/natural history museum with its collections of live animals, bones, rocks, and fossils, as well as hands-on exhibits/explorations in air/water pressure, light and color, sound, force and motion, and electricity and magnetism. Goal is for both teacher and students to overcome their fear of and mystification about science, and realize that we all can learn to wonder, think, and imagine as we observe, by overcoming our obsession with knowing the “right” answer for every question and problem about our world.

Oakland Aviation Museum
Oakland
http://www.oaklandaviationmuseum.org/

Museum Tour - Oakland Aviation Museum
https://www.oaklandaviationmuseum.org/museum_tours_8.html
Grade Levels: K;1st;2nd;3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th
Self-guided tour through the museum to see noteworthy aircrafts and engines. Exhibits include Early Oakland Aviation, African-American Aviation, Women Pilots, Air Racing, Aerial Photography and Space. A guide takes students on a “climb aboard” tour through the Flying Boat-- designed to take off and land in the water only.

Printed 5/29/2019 Field Trip 10
Rock-It Science
Santa Clara
https://rockitscience.com/

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

San Francisco Maritime National Park
San Francisco
http://www.maritime.org

USS Pampanito Daytime Tours
https://maritime.org/education/edupampanito/educational-tours/
Grade Levels: K;1st;2nd;3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th
Here's your opportunity to get a first-hand look at one of the once-secret naval vessels which helped to win World War II. The USS Pampanito (SS-383), a World War II fleet submarine, provides an excellent field trip experience for classes exploring the history of World War II or for other educational groups seeking an out-of-the-ordinary experience. As one of the last surviving submarines from America's World War II fleet, the USS Pampanito provides a unique opportunity to bring alive the history most students can only read about. (More about the Pampanito.)

Using our on-board self-guided audio tour system, your group can walk the decks and tour the interior of an actual submarine while learning about the important role played by the "Silent Service." Your tour will describe the difficult conditions under which the crews of these vessels toiled while you learn about the basic principles of submarine operation.

The Tech Interactive
San Jose
http://www.thetech.org

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.

IMAX film - Forces of Nature
http://www.thetech.org
Grade Levels: K;1st;2nd;3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th
There are nearly 500,000 earthquakes, over 1,000 tornadoes, and about 50 volcanoes erupting around the world each year. The science stories in Forces of Nature are augmented with computer graphics sequences designed to illustrate the inner workings of these forces. Forces of Nature lets you experience what it's like when the ground shakes, mountains explode and the sky turns black and violent. Follow scientists on their groundbreaking quests to understand how these natural disasters are triggered. Learn what is being done to predict and prepare for these events — and minimize their destructive forces.

IMAX Film: Thrill Ride: The Science of Fun
http://www.thetech.org
Grade Levels: K;1st;2nd;3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th
Available to groups of 50 or more at 10 a.m. A white-knuckle adventure that puts you in the front seat of some of the wildest rides ever created. Exploring the science and psychology behind our need for thrill seeking, the film traces the history of thrill rides, beginning with early roller coasters. It shows how the development of the motion simulator ride, first designed for the aerospace industry, has become one of the most exciting innovations in recent film history.
USS Hornet
Alameda
http://www.uss-hornet.org/youth_programs/

**Stem to Stern Jr.**
http://www.uss-hornet.org/groups/schools/

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

The Stem to Stern Jr. Program is designed to explore the relationship between the ship’s operation and Earth science. Our labs are based on California 4th and 5th grade standards and explore the wonders of electricity, magnetism, weather and aviation. By exploring the operational functions of a WWII aircraft carrier the realms of electricity and weather comes alive! Before you tour the ship, your class can participate in a learning experience which merges history and Earth sciences together in a way which only Hornet can. We provide you with advance lesson plans in your classroom prior to your day on board. You and your students come aboard in the morning, participate in a 60 min. lab, break for lunch, and then have the option to resume your adventure with a docent lead tour.

**Program Type: In-Class Program**

CuriOdyssey
San Mateo
http://www.curiodyssey.org/

**Build It and Break It! - In-Class**
https://curiodyssey.org/schools-groups/

**Grade Levels:** 1st;2nd;3rd

Build a wooden bridge and a paper tower, then test their strength until they collapse. Students will explore gravity, stress, and other forces that engineers have to overcome (or utilize) every time they construct a bridge or building. Let’s learn together as we build and break our very own structures. Also available as a field trip.

Edventure More
San Francisco
http://www.edventuremore.org/

**Stomp Rockets**
https://campedmo.org/school-year/in-class-programs/#locationTabs2

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

Students will experiment with the forces of push and pull as they design and launch a rocket powered only by the air of their lungs!

Hiller Aviation Museum
San Carlos
http://www.hiller.org/

**Wright Flight - In-Class**
https://www.hiller.org/learn-and-discover/school-field-trips/

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

Discover the history of Wilbur and Orville Wright and their unprecedented scientific adventure to invent the world’s first airplane. Examine a full-scale recreation of their 1903 Flyer and build a beautifully detailed flying model to help take the excitement of the first flight home. Also available as a program at the museum.
**Amazing Aircraft I - In-Class**
https://www.hiller.org/learn-and-discover/school-field-trips/
**Grade Levels:** K;1st;2nd;3rd;4th;5th
Learn the different kinds of aircraft and identify the parts of an airplane before building and flying a simple balsa glider. Grades 4-5 add control surfaces to guide their glider’s flight. It’s an adventure in aviation!

**Amazing Aircraft II - In-Class**
https://www.hiller.org/learn-and-discover/school-field-trips/
**Grade Levels:** 3rd;4th;5th;8th;7th;8th
Take flight with a rubber-powered airplane! Recommended for older students, Amazing Aircraft II features construction and flight of a larger, propeller powered balsa airplane. Grades 4-8 add control surfaces to guide their airplane’s flight. Launch into the amazing world of aircraft!
Access to outdoor area or gymnasium/multipurpose room recommended but not required.

**Junior Center of Art and Science**
Oakland
http://www.juniorcenter.org/

**Rocket Science In-Class Program**
http://www.juniorcenter.org/workshops.html
**Grade Levels:** K;1st;2nd;3rd;4th;5th;6th
Experiments with air pressure allow students to hypothesize and compare results. Students work in teams to build and launch water rockets which can fly as high as 70 feet. 20 students maximum for grades K-2; 32 student maximum for grades 3-8.
Class can also travel to Junior Center for field trip.

**Lawrence Hall of Science**
Berkeley
lawrencehallofscience.org

**Ingenuity Lab: Engineering with Hydraulics @School Site**
https://www.lawrencehallofscience.org/programs_for_schools/science_at_your_site
**Grade Levels:** 3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th
Students are introduced to engineering and properties of fluids as they envision and build a hydraulic contraption. This experience focuses on students’ defining problems, designing and evaluating solutions, and taking the time to assess, discuss, and redesign their creations. Their projects are recycled for the next group, but students take the experience and ideas home with them.

**Circuit Solutions In Class Workshop @School Site**
https://www.lawrencehallofscience.org/programs_for_schools/science_at_your_site
**Grade Levels:** 3rd;4th;5th;6th;7th;8th
Age Appropriate Activities Tailored for Grade Level Group. Students use electric meters, magnets, and coils of wire to learn how generators and electric motors work. Water and pieces of metal turn students into human batteries. A static electric generator proves to be a hair-raising experience, and a high voltage finale sends sparks flying and exciting soaring.

**Linkage Lab @School Site**
https://www.lawrencehallofscience.org/programs_for_schools/science_at_your_site
**Grade Levels:** 3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th
Students are introduced to engineering as they explore the roles of force and motion in designing mechanisms that move in specific ways. Using two-dimensional mechanical linkages, they create mechanisms with various inputs and outputs, then they use what they have learned to design their own projects.

**Mad Science - Mt. Diablo**
Concord
http://www.madscience.org/locations/mtdiablo/
Learn about electricity, its properties and its role in natural phenomena. Make indoor lighting while conducting hair-raising experiments with an electro-static generator.

**Watts-Up!**
http://www.madscience.org/locations/mtdiablo/WorkshopsGradesK5.aspx?sm=14033

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

NASA Ames Research Center
Moffett Field
http://education.arc.nasa.gov/

**Speakers Bureau**
http://www.nasa.gov/about/speakers/nasa-speakers-howto.html

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

Volunteers from Ames Research Center are available to speak to your group about NASA, earth and space science, space technology, life sciences, and aeronautics. (does not include astronauts)

huong.nguyen@nasa.gov.

**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: Temporary Exhibit**

**Bay Area Discovery Museum**
Sausalito
http://www.baykidsmuseum.org/

**The new fishing boat FAITH open in Lookout Cove**
https://bayareadiscoverymuseum.org/events/faith-lookout-cove-boat

**Grade Levels:** K;1st;2nd;3rd;PK;TK

Explorers can imagine what life on the sea is like in the captain’s quarters or discover a secret hide-away below deck.

**Science + You**
http://bayareadiscoverymuseum.org/exhibits

**Grade Levels:** K;1st;2nd;3rd;PK;TK

(September 24, 2019 to January 5, 2020) What role does science play in health and wellness? Young scientists can explore an interactive laboratory to find the answer in this exciting new exhibit.

**Try It Studio - new permanent exhibit**
http://bayareadiscoverymuseum.org/exhibits

**Grade Levels:** K;1st;2nd;3rd;PK;TK

(Fall 2019) Bay Area Discovery Museum's newest permanent exhibit, Try It Studio, will open this Fall. Stay tuned for specific dates and details.