This is not a program of your school district. Your district does not sponsor these programs and accepts no liability or responsibility for the programs.
Greetings, Educators!

For over 65 years, Powerhouse has worked closely with educators like you to provide opportunities for students to explore the wonders, possibilities, and responsibilities of science. I am excited to share that for the 2019-2020 school year we have developed four NEW programs: Green Energy, Engineering Ecosystems, Energy Waves, and Forces That Shape the Earth. Each one is designed to meet the engineering, technology and application of science (ETS) NGSS guidelines.

We have also updated the way onsite programs are scheduled by adding an additional lesson period so teachers can take advantage of more than one program during a visit. Classes can now rotate between up to four programs in one day. This allows educators to design a full day of immersive and fun learning experiences. Our scheduler is happy to work with you to set up multi-class, multi-program rotations.

Whether you visit us at the science center, or we deliver a program in your classroom, our goal is to ignite a lifelong interest in science for every child that comes through our doors. We look forwarding to working with you and your students in the coming year.

Sincerely,

Emily Anderson | Education Program Manager
<table>
<thead>
<tr>
<th>Program Alignment to Next Generation Science Standards</th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Focus Area:</strong> Earth Science</td>
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<tr>
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</tbody>
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**NEW OUTREACH AND HANDS-ON PROGRAMS**

<table>
<thead>
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</tr>
<tr>
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</tr>
<tr>
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</table>

**OUTREACH PROJECTIONS**

<table>
<thead>
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CHALLENGER LEARNING CENTER

Launch your Students into an exciting mission of space discovery!

Challenger Simulated Space Mission | GRADES: 5 - 8

Designed in cooperation with NASA, the Challenger Missions are interactive educational programs, using the excitement of space flight simulation to inspire students. As students participate in one of two mission scenarios, they apply math, science, technology, and language arts to solve real-life challenges.

Mission fee includes classroom curriculum for pre-mission preparation, a 2 hour simulated mission for 16-32 students, and post-mission classroom activities.

CHOOSE YOUR MISSION

Rendezvous With Comet Halley: Comet Halley is returning to our part of the Solar System in 2061. A team of astronauts constructs a probe, plots an intercept course, and navigates the spacecraft in search of the comet. The objective is to launch the probe through the comet’s tail, and collect data for research.

Voyage To Mars: It is now 2076. Astronauts have occupied a research station on Mars for two years. A team journeys from Earth to replace the crew and continue exploring the Red Planet. The two teams work together to bring the spacecraft in for a successful landing, and launch probes to study the moons of Mars.

Fees: $580 for 16-32 students per mission.
Maximum: 8 adults (including teachers and instructional aides).

DIGGING UP THE PAST

What does it take to be an archaeologist? students are immersed in an experience using tools, methodology, and techniques of archaeology as they uncover and decipher clues about the past.

GRADES | 4 – 8

Students are immersed in a hands-on, interactive archaeological project that integrates multidisciplinary skills in a realistic simulation. Classes work in teams to uncover the story of the fictional people who once inhabited a corner of the science center grounds. Students participate in an outdoor simulated archaeological dig to understand how archaeologists uncover and decipher clues about the past. Students use scientific inquiry methods to study the past while employing math, social studies, reading, geology, and art for a successful and complete archaeological investigation.

Fees: $350 per 2 ½ hour program, maximum 34 students.
EXHIBIT EXPERIENCE

*Explore science topics in a fun and memorable way through our exhibit.* Self-guided tours ensure your students have a hands-on and minds-on experience!

**Expedition Science | Open through December 2020**

Expedition Science invites you on an expedition across time and space to explore amazing worlds we cannot easily see. Visitors will be able see how science has helped us understand things we can’t experience directly. They will learn about prehistoric life and distant stars and galaxies to explore amazing worlds we cannot easily see.

**Fees:**
- $100 for 20 and fewer students
- $200 for 21-40 students
- $300 for 41-60 students

Preschool* and K - 8 | Exhibit Experiences are one hour.

*All members of the Preschool tour group, ages 0-100, are included in the total head count. Please contact 916.674.5000 for more pricing and procedures.

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PLANETARIUM

*Bring your students to Sacramento’s only public planetarium to learn about the universe!* All shows include backyard sky-watching tips.

**Our Place In Space | GRADE: K**

Are other planets hot or cold? What is the Moon made of? Explore the Solar System and learn about the properties of planets and moons. We will start at the Sun and work our way out to the coldest parts of our Solar System and beyond to nearby star systems.

**Cosmic Neighborhood | GRADES: 1 - 3**

Earth orbits the Sun and that allows us to see different things at different times of the year. Join us as we discover how the sky changes from one season to the next. Students learn which stars and planets are visible from their homes. We then examine our neighborhood in space, covering all major objects found in the Solar System.

**Space Adventure | GRADES: 4 - 8**

The Milky Way Galaxy is our home. From distant stars to our own astronomical backyard, we take a look at the Milky Way and the wonders it holds. Come with us as we discover wonders both near and far.

Planetarium Programs for K - 1 are 45 minutes.
Programs for grades 2 - 8 are 1 hour.

**Fees:**
- $100 for 20 and fewer students
- $200 for 21-40 students
- $300 for 41-60 students
Investigate, experiment, find solutions...spark curiosity in your students!

Engage in a lab experience that is fully aligned with Next Generations Science Standards.

**BIOLOGICAL SCIENCES**

**Cellular Adventures** | **GRADES: 6 - 8**

Have your students conduct an investigation to demonstrate that all living things are composed of cells. Students extract onion cells and prepare their sample for microscope viewing by mounting, staining, and adding a coverslip. Then they observe the cells under the microscope and record and sketch their observations. In addition, they compare and contrast their prepared slides to human cheek cells and examine differences between plant and animal cells.

**DNA: Up Close And Personal** | **GRADES: 6 - 8**

In this introduction to biochemistry, students extract their own DNA, using cheek cells as the source. The lab begins with a discussion of the structure of a typical cell. Then students study DNA – the very chemical structure responsible for their unique existence. The lesson culminates with students saving their own cheek cell DNA in a laboratory micro test tube.

**ENGINEERING**

**Engineering Extremes** | **GRADES: 3 - 5**

Build, test, and rebuild! Students are presented with a variety of engineering challenges, each with an extreme condition they have to overcome to build a successful project. From budget limitations to natural disasters, student engineers work in teams to design prototypes and models in order to meet the constraints of the challenge. Students use the Engineering Design Process and discover, first-hand, how failure can be an important part of the problem solving-interactive process and a positive way to learn.

**PHYSICAL SCIENCES**

**Galaxy Quest** | **GRADES: K - 2**

Younger students experience the excitement of space travel! This simulation will have astronauts-in-training visit a space station in orbit around the Earth to complete scientific tests. Upon their return to our home planet students work in mission control to learn more about the challenges of the space environment.

**Remarkable Reactions!** | **GRADES: 3 - 5**

Students perform a series of experiments and observe the fascinating changes chemicals undergo. Students will understand the basics of physical and chemical changes and will be amazed to see how some of these changes can be reversed.

**Charge It Up** | **GRADES: 3 - 4**

Students receive a fun introduction to electricity and learn what really happens when you flip on a power switch. They work with devices that convert energy from one form to another. Working with electrical circuits, students complete a series of challenges.

**NEW HANDS-ON LABS**

**Energy Waves** | **GRADES: 3 - 5**

Waves are not only found in the ocean but also in the sound we hear and the light we see. Students learn how the sound they hear and the waves they can see are connected by using SlinkysTM, and tuning forks. Then they design and test experiments to demonstrate how energy from sound waves can displace objects like salt and water.
Forces That Shape the Earth | GRADES: 3 - 6
The planet we live on is constantly changing. To better understand the mechanics of this change, students study models of the Earth’s layers, explore Plate Tectonics, and learn about thermal energy. They use model fault blocks to understand the mechanics of an earthquake and use a seismometer to measure simulated earthquakes and design and test earthquake proof structures on shake tables.

Fees: $225 per one hour lab, maximum 34 students.

OUTREACH

Invite Powerhouse Science Center to your school! We’ll ignite your student’s interest in science and give them the opportunity to become active participants in their learning.

Incredible Insects | GRADES: K - 1
Students put on their entomologist hats as they learn about how scientists observe and study the diverse world of insects. They learn how to identify basic insect body parts and they see examples of real insects in all shapes and sizes from habitats around the world. They interact with a few live insects up-close and personal! Finally, students explore their own “insect museum” as they use their observation and communication skills to ask questions and to get more information about the insects around them.

Rocks | GRADES: 2 - 4
Students are presented with an exciting introduction to the three rock types by a science educator. They learn about rock formations and properties using an extensive museum collection of rocks and crystals. Four stations are set up for hands-on exploration.

Fossils | GRADES: 2 - 3
Fossils provide evidence about the types of plants and animals that lived long ago. We focus on dinosaurs and set up five hands-on stations with real fossils and replicas. Students learn that fossils are mineral replacements, preserved remains, or traces of organisms that lived in the past. Some of the real fossils include amber with insect inclusions, dinosaur stomach stones, coprolite, fern imprint, and triceratops bones. Replicas of dinosaur claws, teeth, eggs and many more!

NEW OUTREACH PROGRAMS

Green Energy | GRADES: 3 - 5
Students discuss the impact an ever-growing human population has on our planet’s limited natural resources. They work in groups to design an offshore energy farm consisting of model wind turbines and use the Engineering Design Process to decide on the most efficient placement in the wave zones and work under the constraints of animal migration patterns, shifting winds or an unstable ocean floor.
(Grade 5 students calculate the energy output and cost based on the parts used in construction)

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**Engineering Ecosystems | GRADES: 3 - 5**

Students learn about the interdependence of Science, Engineering and Technology. Students are introduced to ecosystems and their components by learning about food chains and food webs and learn the interdependent relationships that exist within them. Using this information and working in groups, students engineer a sustainable man-made ecosystem, a biodome. In order to be sustainable each biodome will need to have a balanced flow of energy and meet the basic needs at each level.

(Grade 5 students calculate energy flow in their biodome)

**Fees:**
- $175 for single program presentation
- $350 for two presentations (same topic)
- $500 for three presentations (same topic)
- $25 Mileage Fee for schools located 25-49 miles from Science Center
- $50 Mileage Fee for schools located over 50 miles from Science Center

Grades K – 1 | 45 minute program
Grades 2 – 6 | 1 hour program

*One class is allowed per presentation. Classes may not be combined and additional students cannot join presentations. A fee of 50% of the total program cost will be invoiced to your school if classes are combined or additional students join a presentation.*

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**SCHEDULING + POLICIES + PROCEDURES**

**SCHEDULING**

To schedule a program, please call 916.674.5000. Our scheduling specialist will work with you to determine a date and time for your preferred program. School name, address, and phone number are required at time of booking. You will be sent an invoice after you have made your reservation.

**DEPOSIT & PAYMENT**

A 50% deposit of the total program fees is due 60 days after making your reservation. Final payment is required at least 14 days prior to your scheduled program date. Payments not received within the required time may result in the cancellation of your reservation and a late fee. Send a single check, made payable to Powerhouse Science Center, with a copy of your invoice. Please do not send individual checks or cash from students/parents for payment.

**Send payment to:**

Powerhouse Science Center
3615 Auburn Boulevard
Sacramento, CA 95821

All major credit cards are accepted for payment -- in person or over the phone. A late fee of $20 will be charged for past due accounts.
CANCELLATIONS & RESCHEDULING
Cancellations and rescheduling must be done at least 60 days prior to your original program date to avoid a cancellation/date change fee. A fee of $25 will be charged for cancellations and program date changes made 31 - 60 days prior to the original program date. A fee of $50 will be charged for any change within 30 days prior to the original program date.

Groups that have made reservations and do not cancel their program and/or fail to show up for their scheduled program will forfeit their deposit. We recommend confirming your reservation at least two weeks prior to your visit.

TEACHERS & CHAPERONES
Teachers and chaperones are required for all science center programs and tours at a ratio of one adult to every six students. Teachers are counted in this one to six ratio. These adult chaperones are included as part of your program fee. Additional adults are allowed, as space permits, at $5 per adult -- payable at the time of your visit. Please do not bring individual payments for additional adults. We request you make a single payment for additional adults to Guest Services at check-in. Students must be accompanied and supervised by an adult at all times during their visit. Siblings are not allowed in any programs.

FOOD & DRINK
No food or drinks are allowed inside the science center. We have shaded outdoor picnic tables that you are welcome to use for lunch and snack breaks. The science center does not have any covered or indoor lunch/snack facilities.

CHECK-IN PROCEDURE
The lead teacher should check-in with Guest Services, located inside the main entrance of the science center. Have the total head count for your group -- including all students, teachers and chaperones. Any additional fees will be collected at that time.

Your group will be directed to the appropriate location for your program. Please arrive approximately 15 minutes before your scheduled program to allow for students to use the restrooms.

Ready, Set, SCIENCE!
Book your program now!
Call 916.674.5000.