SCIENCE ON WHEELS

Partial Day Experience Program Offerings

PACIFIC SCIENCE CENTER

To submit a program inquiry, please go to
www.pacificsciencecenter.org/education/science-on-wheels

SCIENCE ON WHEELS
PARTIAL DAY PROGRAMMING OFFERINGS

Science on Wheels Partial Day Experiences include a variety of program styles and topics, so there is something for every audience. For a large audience looking for exciting demonstrations, select a Live Science Show. For high engagement interactive learning for just a few student groups, choose Hands-on Workshops. For groups with a wide range of knowledge and time seeking high levels of free-exploration, we recommend the Pop-up Exhibits, which are a great option for libraries and community events.

Programming Option *Choose one*:	Base price	Add an additional hour *of the same programming*:
45-minute live science show	$840	+$275 ($1115 total)
Three consecutive hands-on workshops (45 mins each)	$840	+$275 ($1115 total)
Up to three hours with a pop-up exhibit set	$840	+$275 ($1115 total)

Book two Partial Day Experiences back-to-back to extend the fun!

LIVE SCIENCE SHOW

Duration: 45 minutes. At least 30 minutes between shows if booking 2 or more
Number of Participants: up to 400
Required Equipment: Two 6-foot tables

Super Cool Science Show: The three states of matter...do they matter?? Dive into the world of the super cold where gases become liquids and liquids become solids. Liquid nitrogen takes center stage in a variety of experiments with surprising results. Find out what causes matter to fizz, freeze, foam, and fly!

Radical Reactions: Heat! Light! Gas! Color change! Flames are blue and green, rainbows exist in glass tubes, and dollar bills catch fire. See our presenter throw fire, watch an ordinary Ziploc turn into an exploding yellow bag, and fall in love with the foam fountain finale in this lively yet fact-filled 45-minute live science show.

Radical Reactions Additional Requirements:

- Large indoor space with at least 12 ft ceiling height clearance.
- Access to water and janitor's/nonfood prep sink
- Includes controlled fire demonstrations and chemical reactions.

Questions? Email edprograms@pacsci.org or call (206) 443-2925

INTERACTIVE EXHIBITS

- **Duration:** up to 3 hours
- **Number of Participants:** up to 300; we recommend breaking into smaller groups of no more than 60 to visit the exhibits at once.
- **Requirements:**
    - Indoors or outdoors with a cover
    - 8-10 tables to put exhibits on
    - Access to electricity
- **Note:** Exhibit text is in both English and Spanish

Space Odyssey: Travel through our solar system and beyond in this exhibit set that explores constellations, gravity, and planetary science.

Math: Math is everywhere, from maps, to quilts, to fitting toys in a box. Observe how beautiful fractals resemble patterns in nature. Piece together puzzles, from pentominoes to 3-D buckyballs. How many ice cream flavor combos can you make? What are the chances you pull a matching pair of socks from a dryer?

Engineering: Connect gears, engineer bridges, and try electrical engineering in this fun exhibit set that encourages problem solving and building skills.

Physics: Can you overcome the strength of an electric magnet? Watt does it take to make an electrical circuit? From pendulums to periscopes, physics has it all: light, sound, electricity, and motion!

HANDS-ON WORKSHOPS

- **Duration:** 1-3 consecutive workshops; each workshop is 45 minutes long and requires at least 10 minutes to reset materials before next workshop
- **Number of Participants:** up to 32 participants per workshop (max 24 participants if mobile planetarium)
- **Workshop selection:** First, select a theme. Then select 1 to 3 workshop titles within that theme.

SPACE SCIENCE

Astronaut Aptitude (grades PreK-TK): Become an astronaut in training by preparing your brain and body for space through teamwork, tool use, problem solving and movement.

Lighten Up (grades K–2): Discover the properties of light by reading a science story and exploring how light interacts with different materials.

Your Place in Space (grades K–2): What makes a planet a planet? Discover the answer and sort objects from our solar system.

Cosmic Colors (grades 3–5): Space is full of colors! Use diffraction glasses to see the many different colors light can be. **Best suited for rooms that can be darkened.**

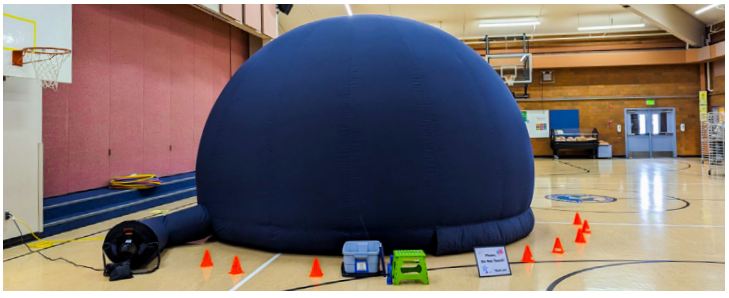
Plan-It Mars (grades 3–8): What does it take to plan an expedition to Mars? Find out and plan one of your own.

Roving Robots (grades 3-8): Learners code Ozobot robots on maps of the Mars landscape to simulate NASA's data collection on Mars. This workshop supports Computer Science standards.

Spectacular Spectra (grades 5–8): What are stars made of? Find out while examine gases through diffraction glasses in this unique program. **Best suited for rooms that can be darkened.**

Mobile Planetarium* (K–8): Our inflatable mobile planetarium brings the magic of the night sky indoors at any time of day! Participants will learn how to identify constellations and how our night sky changes throughout the year. **Maximum 24 people in the planetarium total.**

- **Up in the Sky (K–5):** What's up in our night sky? Learn about important stars on this stargazing adventure.
- **Star Search (5–8):** What are constellations and how do you identify them? Find out and then search for constellations.



Please see Planetarium Requirements documents for more information.

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MATH

The Art of Comparison (PreK–TK): Shapes, sizes, and numbers-oh my! Practice grouping, sorting, and categorizing, while exploring a variety of materials and reading a storybook.

Mirror Image (K–2): Explore the world of symmetry while playing "The Reflection Game" using PentaBlocks™! Design colorful, symmetrical patterns and find symmetry in the world around you. **Document camera recommended.**

Sometimes Never (K–2): Take a spin with a colorful probability device to find out the chances of going to recess or visiting the library. Check predictions by recording spinner results with tiles on a wooden tile board to make a bar graph. **Document camera recommended.**

Big Things, Little Things (K–2): Our story of chickens in space initiates your exploration of perspective and scale. Match three dimensional objects to aerial photos and discover that close-up objects appear larger and far away objects appear smaller.

Puzzling Pentominoes (3–5): Puzzled about pentominoes? A pentomino is a special arrangement of five squares that can make pictures and letters if you piece them together just right. Exercise your spatial reasoning using these cool puzzle pieces. **Document camera recommended.**

Collect All 4 (3–5): How much money will you have to spend to collect all four of our unique cereal box characters? Dig deeply into "cereal," graphs and wallets to explore probability through the popular world of collecting. **Document camera recommended.**

Code Breakers (3–5): Did you know codes and ciphers are based on mathematical reasoning? Discover the math in real-world codes and ciphers by exploring secret messages. Break historical codes, decipher mysteries, and create your own form of communication based on logic and patterns. **Document camera recommended.**

Dynamic Dice (5–8): Explore polyhedrons while designing and playing carnival dice games. Game operators calculate and convert probabilities to choose prizes. Predicted probabilities are compared to results. **Document camera recommended.**

NetShape Navigator (5–8): Using fun Polydron™ manipulatives, discover the mathematical connections between geometric solids and their "networks" or "nets" - a flat drawing that can be folded to form a 3-D solid. **Document camera recommended.**

Fabulous Fractals (5–8): What do a seashell and broccoli have in common? Through exploration of everyday objects and exotic art, learn more about this living branch of mathematics that can help us understand chaotic events like weather or geometric patterns in nature. **Document camera and computer connection recommended.**

ENGINEERING

What Floats Your Boat (PreK-TK): Discover the many types of boats with a storybook, then test the buoyancy of different objects and design your own boat.

Machine Makeover (K–2): Become hands-on inventors, creating a Lego Duplo Toolo® machine to help solve everyday problems. As mechanical engineers, you design a machine that will lift beams or scoop rocks!

Critter Coders (K-2): As software engineers, learners program a mouse robot to drive through a maze. Design, test and redesign to get to the goal! No coding experience necessary. This workshop supports Computer Science standards.

Radical Robots (K–5): How can robots help us solve problems? Explore the world of robotics while becoming real robot programmers. Kibos® will temporarily take over your classroom!

Material World (3-5): Receive a mystery substance that you can bounce, twist and stretch to the limit! Brainstorm creative ways people might use a non-Newtonian fluid that both flows and breaks. **Document camera recommended.**

Bridge the Gap (3–8): Reinforce your skills in building and analyzing structures. Test the limits of a K'NEX® bridge and discover what makes it stronger. Will your bridge survive?

Wired Up (3–8): Learn what electricity is and how it flows to turn on lights and power the world around us.

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PHYSICS

The Air of our Ways (PreK–TK): An unseen force exists all around us—air. Investigate how air moves objects and takes up space, then follow the journey of a puff of air in a storybook.

The Force (K–2): Can a magnet stick to a rock? Be surprised by the attractive force of magnetism! Discover the mysterious properties of magnets through exploration.

Leaping Lenses (K–2): Predict and then observe which objects bounce light and which ones bend light as we discover the many places mirrors and lenses can be found. **Room must be darkened for best results.**

Good Vibrations (K–5): Dive into the wonderful world of sound with tuning forks, musical instruments and more. Investigate how people make and hear sounds. **Please note: This lesson can get quite loud.**

Charged Up (3–5): What is electricity and how does it travel? Learn about circuits and generators firsthand by designing electric circuits and generating electricity to power lights.

Sensational Sensors (3–5): Investigate energy transfer in sensors. Build your own sensor systems and explore real world sensors as we follow the flow of energy from input to output.

Refraction Action (3–8): Observe the behavior of laser light as it interacts with different materials to understand reflection and refraction. Discover the differences between convex and concave lenses. **Room must be darkened for best results.**

Electric Magnets (5–8): How are electricity and magnetism related? Find out by generating electricity with magnets and using electricity to make magnets.

Pulley Power (5–8): Learn to lift heavy objects with ease. Design and explore pulley systems to find out how and why this simple machine makes work so much easier. **Document camera recommended.**

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