THE NEW LEARNING LANDSCAPE

Pacific Science Center Educator's Guide 2023–2024



EDUCATOR'S NOTE

Dear Educators,

As the school year approaches, we here at Pacific Science Center are eagerly preparing to embark on another year of scientific exploration: from the distant reaches of our universe, to the tiny cells that make up our bodies. We believe that science is a boundless process of inquiry, discovery, and problem solving, and we can't wait to share that experience with you and your learners this year!

At the heart of our mission is a commitment to ignite curiosity in every child and fuel a passion for discovery, experimentation, and critical thinking in all of us. And we certainly can't achieve that goal without partnering with educators like you, as we work together to enable access to science education for all.

One of the ways we strive to increase access is through our Digital Discovery Workshop programs, where physical boundaries are transcended and participants engage in live, interactive demonstrations and activities. This year, we are thrilled to introduce new online programs designed to deepen the impact of students' in-person PacSci experiences. By activating background knowledge, connecting content to daily lives, and providing personalized Q&A with a PacSci educator, these new programs provide a secondary touch-point to help learners get the very most out of their PacSci experience.



We are truly grateful for your dedication and passion.

Beyond the virtual realm, we also bring science directly to you through Science on Wheels—our outreach program that includes live science shows, hands-on workshops, and pop-up exhibits set up right in your learning space! And, of course, we welcome students onsite to embark on an adventure exploring our iconic dinosaur exhibit, mesmerizing Tropical Butterfly House, Salt Water Tide Pool, and so much more.

To all the incredible educators out there, we are truly grateful for your dedication and passion. Together, let's inspire a generation of youth ready to tackle the challenges of tomorrow!

With curiosity,

tallon Auski

Holly Duskin Digital Learning Manager

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DIGITAL DISCOVERY WORKSHOPS

Bring engaging science, technology, engineering, and math (STEM) content directly to your space. Designed to support your curriculum, Digital Discovery Workshops ignite students' imaginations and broaden their horizons all without leaving the classroom.

PacSci's educators join you live from our Digital Learning Studio, and lead students through interactive sessions from distant moons to local wetland ecosystems. Each program includes a Teacher Toolkit with reading lists, hands-on activity guides, and STEM videos. Digital Discovery Workshops are for learners in grades Pre K–12 and support Next Generation Science Standards (NGSS).

DIGITAL DISCOVERY WORKSHOPS

Looking for Virtual Field Trips?

Virtual Field Trips are now Digital Discovery Workshops. In addition to new digital program options, Digital Discovery Workshops also include Teacher Toolkits, which provide hands-on activity guides, STEM videos, and reading lists to help you extend the learning experience.



Who are these for?

- Digital Discovery Workshops are designed for Pre K-12th graders joining from classrooms, after-school settings, scout groups, library programs, or other community groups.
- Programs are adjusted in both content and delivery style to best fit the grade of participants.
- Most programs have a maximum capacity of 50 students to encourage a high level of interactivity.
- Some program titles can accommodate larger audiences for STEM nights, whole grade bands, or community events.
- Accommodation options are available for participants with visual, auditory, cognitive, and physical disabilities, as well as for English Language Learners.

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The Educators are fabulous and it has been really obvious that they are passionate about what they do.



How they work

- We send you a private Zoom link, or join a virtual platform of your choice.
- 2. Meet your PacSci Educator for a short tech check, then start your 40-minute live program.
- 3. PacSci Educators guide participants through demonstrations and activities as they facilitate active student participation.
- 4. Each program includes an optional followalong worksheet, as well as connected extension activities, reading lists, and videos to use before and after the program.

What you will need

- One shared device with a large screen and speakers *or* individual devices.
- Internet connection.
- Access to your selected virtual platform, such as Zoom, Teams, or Google Meet.
- A webcam and microphone on participant device(s).
- An adult or volunteer present to help facilitate.



DIGITAL DISCOVERY WORKSHOP PROGRAMS

Available Programs

Animal Adventure

Best for Grades: Pre K–2nd Maximum Number of Participants: 50

Why do some creatures have fangs, fur, or scales? Go on an animal adventure to compare different species, and learn how animal adaptations help them survive! Geared towards your youngest learners, this Digital Discovery Workshop features a storybook as the basis of the adventure.



Ecosystem Investigators

Best for Grades: 3–8 Maximum Number of Participants: 50

Work together to create a virtual ecosystem model revealing how living and non-living parts connect and interact in an aquatic environment. Using your new knowledge about ecosystem interactions, become a wetland scientist and explore the relationship between organisms in a real pond sample. Can you help us determine if the wetland ecosystem is in balance?

Featured Creatures

Best for Grades: 3–6 Maximum Number of Participants: 50

Animals are adapted to the places they call home. Their shape, size, skin, and skeleton all work together to help animals survive and thrive. Take a deeper look at real animal skin, skulls, and skeletons, and learn how different animals move and live!



Forces of Energy

Best for Grades: 3–8 Maximum Number of Participants: 50

Discover the signs of energy present all around us. Explore ways to transfer energy to the places we need it using the push and pull of different forces. Learn how engineers use the science of energy to design technology that helps power our communities.

Global Soundscapes

Best for Grades: 3–12 Maximum Number of Participants: Unlimited

Embark on an ear-opening journey into the science of sound and the exciting new field of soundscape ecology. Hear sounds from across the globe as we investigate the properties of sound and learn about the tools that scientists use to record and analyze complex soundscapes. Discover what soundscapes can tell us about the changing health of our planet.

Polar Predictions

Best for Grades: 3–8 Maximum Number of Participants: 50

Join us on an icy expedition to Earth's polar regions to discover the role they play in regulating our planet's climate and how changes at the poles have a global effect on Earth. As budding climate scientists, practice using real climate data to investigate patterns at the poles and make predictions about future trends shaping weather around the world.

Piece of Mind

Best for Grades: 3–8 Maximum Number of Participants: 50

Be awe-inspired by the power of the brain as students learn how it controls memory, movement, and sight. Discover how the brain functions through live activities and fun puzzles, and see a real human brain specimen!

Radical Reactions

Best for Grades: Pre K–12 Maximum Number of Participants: Unlimited

Observe the explosive ways chemicals unite and react in this high energy show! Discover the signs of chemical reactions through experimentation and learn how this creates the world around us.



Robot on Mars!

Best for Grades: 3–8 Maximum Number of Participants: 50

How do teams of scientists and engineers use robots to help them answer big science questions about places too difficult for humans to visit? Discover unique design features of remote sensing missions to the planet Mars, and practice interpreting the data these robots collect. Can you use what you've learned to solve a remote sensing mystery of our very own?

DIGITAL DISCOVERY WORKSHOP PROGRAMS

Stick the Landing: Engineering Series Best for Grades: 3–8

Maximum Number of Participants: 50

Over the course of three sessions, use the steps of the engineering design process to build, test and refine your own model of a Mars lander in your learning space. Dive into past and future missions to Mars and carefully consider the criteria and constraints for both real Mars missions and your own lander model. Learn how engineers are just one of the many careers that contribute to complex solar system missions.

Planetarium: Night Sky Tonight

Best for Grades: Pre K–12

Maximum Number of Participants: Unlimited

Become a true backyard astronomer with our virtual planetarium. Learn how living on a giant spinning ball changes what can be seen each night, discover how to find constellations, and even how the sky can be used to find directions!

Planetarium: Planetary Geology

Best for Grades: Pre K–12 Maximum Number of Participants: Unlimited

Take a wild virtual ride to visit some of the planets and moons that make up Earth's neighborhood, the solar system. Explore these unique landscapes searching for craters, volcanoes, oceans, and more. What can we discover about these faraway celestial bodies by comparing their geologic features to our home planet, Earth?



Looking for a Digital Discovery Workshop in another language?

We have pre-recorded programs available with subtitles in Chinese, Amharic, Somali, and American Sign Language, as well as spoken Spanish. Find out more information by emailing our Education Team at **edprograms@pacsci.org**.



Wetland Wonderers

Best for Grades: Pre K–2nd Maximum Number of Participants: 50 Join us on a virtual hike to learn how a wetland habitat provides food, water and shelter to the animals that call it home. Practice your nature observation skills by exploring live aquatic organisms from a wetland pond and discover how these animals survive in their watery environment.

Digital Learning Links

New virtual programs are coming Fall 2023 to pair with your in-person PacSci experience. Focusing on crosscutting concepts and science and engineering practices, these Digital Discovery Workshops are specially designed to prime learners to get the most out of their on-site or outreach visit. Access these unique digital programs when you book a PacSci Field Trip or Science on Wheels outreach visit.

Q+A: CAILEE SMITH

Cailee Smith is the Outreach Programs Manager at Pacific Science Center, where she oversees the Science on Wheels program. In this Q&A, she shares some insights into interactive education and what her team is dreaming up for the future of Science on Wheels.

What makes interactive education such an important tool for learners?

Learning is more than hearing and remembering facts. Interactive education is so important because when learners do activities for themselves and discuss what they are learning, they comprehend much more deeply. Interactive education is also important because it helps empower learners. They aren't just learning about someone who did an experiment, they are doing an experiment for themselves. It promotes feelings of self-efficacy and a positive relationship with STEM. In fields that historically have not been diverse, it's so important for all learners across Washington to feel empowered and know that they can do science, they can think like an engineer, and they can pursue STEM as they continue their education.

What are some of the new programs your team has built since you've joined?

We re-wrote the science show for Blood & Guts—it's a new program called Systems Party. We're celebrating the birthday party of a skeleton and introduce the idea that the human body needs its systems to work together to function. We eat cake to talk about the digestive system and we dance to get our blood pumping to talk about the cardiovascular system. It's really fun but still educational; I'm so proud of it.

Tell us about one of your favorite moments from Science on Wheels.

I was in a classroom, and there was one student who walked up to me at the end of the class and said,



"Ms. Cailee, I am infested ... I'm infested with learning." And it was just this wonderful moment, where his excitement and joy were so clear, even if it wasn't the perfect word choice.

What's something that educators might be surprised to learn about Science on Wheels?

It's not just about science! We help teach social and emotional learning. It's so important, especially now after the pandemic. Hands-on activities are often done in groups that share materials, and we remind learners how adult scientists work together too. We are also teaching resilience. Growing up, I was a competitive figure skater, and the best way to learn a jump was by getting in a harness, and jumping, and rotating, and falling, again, and again, and again. By testing ideas that don't succeed, learners are doing the same thing I did every time I fell on the ice. They are getting up, applying what they learned, and trying again. And I think that's transferable to all areas of life.

What are you most excited for in the upcoming school year?

Last year, Science on Wheels relaunched after a long pause during the pandemic. This year, we are reintroducing more program options. I'm most excited to bring back stand-alone live science shows, like Radical Reactions. We're also doing a lot of work this year to increase the interdisciplinary content throughout our programs. We are adding computer science and more cross-cutting concepts into the activities. Our goal is to better show how science, technology, engineering, and math all work together in the real world and give learners a greater appreciation for the importance and relevance of STEM in their everyday lives.

MEET THE TEAM: PACSCI EDUCATORS



Anthony Jones is the Science Engagement Manager at PacSci, formerly a Program Director for YMCA of Greater New York, and Programs Supervisor for YMCA of Greater Seattle.

As a former director of YMCA programs, and now as the manager of Science Engagement, you've experienced field trips from different perspectives. What do you love most about field trips?

Anthony: Yes, so, so many field trips! For me, what I love about field trips is the opportunity for our youth to learn through experience. The learning impacts are different when it's hands-on activities and in a new learning space.

How does Science Engagement fit into a successful field trip experience?

Anthony: Science Engagement commits to our mission of igniting curiosity in all our guests. From inspiring wonder in the planetarium, to fiery live science shows, to helping folks learn the difference between a butterfly and a moth, Science Engagement makes sure our learners walk away from PacSci with a truly great experience.



Alec McQuinn is a Science Engagement Coordinator, formerly Science on Wheels Coordinator, as well as the 3rd member of his immediate family to work at PacSci.

What do you feel is special about PacSci education that keeps you involved through different roles?

Alec: PacSci talks about igniting curiosity, and being an educator here means I get to be involved the moment when that learning spark happens. Every day, I get to show field trip groups something new about tide pool creatures, butterflies, or the solar system. When I was a part of our Science on Wheels program, I got to bring that spark moment directly into schools around the state.

As a child of a PacSci educator, you have a history with PacSci that's longer than most. Considering that long-range lens, what are you most excited about this coming year?

Alec: PacSci has changed many times since I came here as a kid, and I think the current changes are the most exciting yet. I'm particularly excited about some of the new astronomy content, especially anything related to infrared. Spectroscopy is an underrated science, and infrared cameras are just plain old-fashioned fun.



Julia Jansen is a Digital Learning Educator with experience teaching astronomy, physics and math. She's most recently been expanding her crawfish raising skills, in support of the ecosystems digital workshops.

What do you enjoy about being a PacSci educator?

Julia: I really love questions from kids, that's one of my favorite parts of doing these interactive programs. Our programs have relatively consistent outlines, but even when I ask the exact same question to different groups, the kids often respond differently; the different groups bring up new ideas, new points, and new questions I've never considered before. I love seeing these topics through a kid's eyes while watching them make their own meaning with what I'm sharing.

REGISTRATION: DIGITAL DISCOVERY WORKSHOPS



Registration Process



Explore and Select Programming Options

Engage your students with enriching content that enhances your curriculum and ignites their curiosity with a Digital Discovery Workshop. See page 6 for programming options.



Schedule Your Digital Discovery Workshop

Submit a Digital Discovery Workshop inquiry at **pacsci.org/education**. Our registration representatives will get back to you within 2–4 business days and provide a Calendly link to book a program. Programs should be booked at least two weeks in advance. We book on a rolling calendar year, so we can schedule as far in advance as you like!



Stay in Touch

Look out for any emails from our team regarding scheduling and programming questions.



Get together with your students and experience STEM learning in a new and refreshing way.

Pricing

Number of participants	Price
1-99	\$200
100-199	\$300
200–299	\$400
300+	\$500

Funding available: Qualified low-income schools may receive up to 100% off Digital Discovery Workshop rates. Typically schools with 40% or higher free and reduced lunch percentage qualify for subsidies.

I liked how interactive it was—even on Zoom my students felt as though they were included.



REGISTRATION: SCIENCE ON WHEELS

Whole Day Experience Pricing

Location	10 Classroom Workshops	15 Classroom Workshops
Local	\$2,375	\$3,075
Regional	\$2,850	\$3,450

See page 21 for our delivery map. **Funding available**: Qualified low-income schools may receive up to 100% off Science on Wheels rates. Typically schools with 40% or higher free and reduced lunch percentage qualify for subsidies.

Partial Day Experience Pricing

Programming Option (choose one)	Base Price	Add an hour of the same programming	Add the Pop- up Exhibit set
45-minute Live Science Show	\$750	+\$200 (\$950 total)	+\$750 (\$1,500 total)
3 consecutive Hands-on Workshops (45 minutes each + 10–15 min reset time between workshops)	\$750	+\$200 (\$950 total)	+\$750 (\$1,500 total)
3 consecutive hours with a Pop-up Exhibit Set	\$750	+\$200 (\$950 total)	

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[The Educators] allowed the kids to be curious and explore, and the overall experience was so much fun!





Registration Process



Explore and Select Programming Options

Bring interactive science learning to your students without leaving your school or learning site. With both whole day and partial day programs, we have what you need to fill your day with science! See page 20 for our programming options.



Schedule Your Science on Wheels Program

Submit a Science on Wheels inquiry at **pacsci.org/education**. Our registration representatives will get back to you within 2–4 business days. We ask that bookings be made a minimum of six weeks prior to your requested program date. See page 21 for our programming delivery map.

3 Stay in Touch

Look out for any emails from our team regarding scheduling and programming questions.

4 Enjoy Your Science on Wheels Program

Watch the curiosity and excitement on your learners' faces as they participate in interactive shows, workshops, exhibits and more with our Science on Wheels Educators.

REGISTRATION: FIELD TRIPS

Pricing

Program	Ticket Type	Rate Per Person
General Admission	Field Trip Student	\$10
	Field Trip Chaperone	\$0
	Field Trip Extra Chaperone (More than 1:4 adults to youth ratio)	\$17.95
IMAX [®] Documentary	Field Trip Student	\$4
	Field Trip Chaperone	\$0
	Field Trip Extra Chaperone (More than 1:4 adults to youth ratio)	\$4
Laser Shows and Planetarium Programs	Field Trip Student	\$4
	Field Trip Chaperone	\$0
	Field Trip Extra Chaperone (More than 1:4 adults to youth ratio)	\$4

IMAX® is a registered trademark of the IMAX Corporation

Funding available: Qualified low-income schools may receive up to 100% off Field Trip rates. Typically schools with 40% or higher free and reduced lunch percentage qualify for subsidies.



Registration Process



Explore and Select Programming Options

PacSci Field Trips offer hands-on exhibits, shows, and innovative programs to ignite students' curiosity for science. See page 23 for our programming options.



Schedule Your PacSci Field Trip

Eligibility: School groups coming to PacSci for an educational experience are eligible for our Field Trip rate. We will need your school's name, address with zip code, and school's FRL % to process with the field trip rate. PacSci Field Trips are only eligible to schools, including public and private schools. Non-School Groups wishing to visit PacSci may be eligible for Group Rates. Visit **pacsci.org/visit/group-sales** to learn more.

Documentary IMAX[®] movies and laser shows are available for school groups. Planetarium Programs will be available Fall 2023. Please contact our registration team at **edprograms@pacsci.org** to learn more.

Submit a Field Trip inquiry at **pacsci.org/education/field-trips**. Our registration representatives will get back to you within 2–4 business days. If you do not meet the above qualification, you may be eligible for our group rate.

Please remember: There must be one adult chaperone for every 10 students. Chaperones are to remain with their designated students during their visit, regardless of age or grade level.

3 Stay in Touch

Look out for any emails from our team regarding scheduling and programming questions.

Enjoy Your PacSci Field Trip

Get ready to explore PacSci's offerings. With our interactive exhibits, documentaries, and shows, you and your students will be left with an unforgettable learning experience.



BE CURIOUS * **BE CURIOUS BE CURIOUS * BE CURIOUS *** * **BE CURIOUS BE CURIOUS ***





THE NEW LEARNING LANDSCAPE

How PacSci Has Evolved Their Digital Programming to Fit Educator's Needs



m having a hard time hearing you." Julia Jansen and Troy Mead, educators on Pacific Science Center's Digital Learning Team, are running through their standard Digital Discovery Workshop pre-show checklist with a teacher, but they've hit a technological snag. They spend the rest of the period before their scheduled start time working with the teacher, offering

advice and testing new solutions from the Digital Learning Studio within Pacific Science Center.

It's not a typical start, but for the members of PacSci's Digital Learning team, there isn't really a template for "typical" to begin with. Each show has multiple variables: what age are the students? What kind of technology does their classroom have? What have they studied this year? How is their internet connection? And of course, each new group of students brings their own dynamics, interests, and points of view.

"Kids are always going to be different," says Jansen. "[They] have vastly different skills from year to year, based on what's going on in their personal lives, based on what's happening in society as a whole... So it's really important to constantly be reflecting on how to make things more engaging, and how to make things connect better for students."

The educators handle each new wrinkle and surprise with aplomb. Student questions are answered with confidence, curriculum is modified on the fly to account for the interests of the class, and technical problems are solved within ten minutes, Jansen and Mead have helped solve the teacher's sound problems. The program is ready to start.

Watching the educators work is like seeing a magic show from backstage; most teachers on the other end of the screens will remain unaware of the nuanced ways each show is modified for their classrooms' needs. But for the educators, it's old hat. In many ways, their ability to quickly adapt has been part of the Digital Learning Team's DNA from the start.

"Like most informal science institutions, PacSci didn't have any virtual learning programs before

it's really important to constantly be reflecting on how to make things more engaging

2020," explains Holly Duskin, Digital Learning Manager. "Starting in the fall of 2020, we started doing personalized programs that were more tailored to smaller groups, and that's what became our Virtual Field Trips program which have now evolved into Digital Discovery Workshops."

These virtual programs quickly became one of the primary ways that PacSci enacted its mission of providing informal education programs, delivering up to 30 programs a week at the onset of the 2020-2021 school year, and over the next few years, the program would continue to adapt to a changing landscape. In 2021, PacSci built the Digital Learning Studio, where educators have two sound stages dedicated to recording and delivering virtual programs. The team itself has grown as well, from two educators and a producer borrowed from elsewhere in the organization, to five dedicated team members. Alongside all of this, the team has continued to innovate new ways to reach learners digitally.

"We take a pretty broad approach to what digital learning means," says Duskin. "To us, it means any time we are using digital tools, interactives, or platforms to engage our participants in any educational activity. Sometimes that means a virtual platform to connect with our audience, like Zoom or YouTube, but it can also mean things like leveraging really complex digital models, like a virtual planetarium. ... We're thinking about how those digital tools can help people to experience things on a different level."

As a result, the materials and programs the Digital Learning team has created for educators are numerous: in addition to Digital Discovery Workshops, they've pre-recorded shows in multiple languages, developed reading lists for Teacher Toolkits, and written digital activity guides and worksheets. Additionally, they participate in public outreach in the form of partnerships with organizations like local broadcaster FOX13 and the Seattle Storm.



And among all of this, they're introducing yet another evolution for the 2023–2024 school year: digital programs packaged with Science on Wheels visits and onsite field trips, to be conducted before or after classes participate in those programs.

"I remember when we started talking about the fact that we needed to evolve [virtual programming]," says Diana Johns, Vice President of Exhibits, Education and Outreach. "It wasn't because anybody was doing anything wrong, it was because we had created something during a period of time that was rapidly changing, and now coming out the other side of it, it required rethinking again."

"Something that we've heard from folks is that they're looking for ways to connect their inperson experiences with what they're doing in the classroom," explains Duskin. "What these new programs do is give those learners the chance to connect with a PacSci educator before their visit, and get them to start thinking about body systems, or the history of astronomy, or what kind of mindset you need to have to be an engineer, and build that background knowledge. Or if they're participating afterward, it helps them not just have it be a one-and-done experience."

Over the past year, the team has developed four new virtual programs: three to be paired with different Science on Wheels curricula, and one for classes that visit PacSci for a field trip. Each program was developed from the ground-up, with all the members of the Digital Learning Team collaborating and providing feedback on themes, lesson plans, and ideas. It's been a major task, but according to Duskin, it's all part of a larger mission.

We're thinking about how those digital tools can help people to experience things on a different level.



"None of us lives or works in a bubble, we're all part of a community. I think especially when it comes to educating our youth, that is a community effort. It's no one person's job, as a parent, or a teacher, or a museum, or a science center. It's really all of our responsibility as a community to educate our youth. So it's important to think about how we as a science center, and digital learning specifically, can play a role in that ecosystem of learning."

To learn more about Digital Discovery Workshops or to book a program visit **pacsci.org/education/ddw**.

SCIENCE ON WHEELS

Bring the PacSci experience to your community! Science on Wheels travels across the Pacific Northwest with interactive learning experiences that build excitement for STEM and promote critical thinking. With a wide range of standardsbased programs and new digital learning connections, we offer experiences for learners of all kinds, from schools with hundreds of students to small libraries with a handful of future scientists, and everything in between. Science on Wheels is for learners in grades K–8 and support Next Generation Science Standards (NGSS).

SCIENCE ON WHEELS

Who are these for?

- Science on Wheels is designed for K–8th graders participating from schools, libraries, and community groups.
- PacSci provides discounted rates for qualifying schools, libraries, and community groups, making STEM experiences accessible to all.
- Whole Day Experiences can serve 6–15 classrooms or groups (120–480 participants per day).
- Partial Day Experiences can serve a maximum capacity of 400 students during a Live Science Show, 1–3 classrooms or groups (up to 96 participants) during Hands-on Workshops, and 300 students during a self-guided Pop-up Exhibit.

What Programming is Included?

Science on Wheels offers Whole Day Experiences and Partial Day Experiences with three unique programs: a Live Science Show, Hands-on Workshops, and a self-guided Pop-up Exhibit. Live Science Shows bring science to life with thrilling demonstrations for large audiences.



Hands-on workshops support traditional classroom curriculum with learning materials and exploration that bring STEM to life.



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The Educators were incredibly engaging and the kids *all* loved the assembly and classroom presentations.

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Our **Pop-up Exhibit** sets bring science center exhibits to you and encourage learners to explore, ask questions, and discover phenomena.



Digital Learning Links

Learning has greater impact when it extends beyond a single experience. PacSci's digital connections link Science on Wheels experiences to Digital Discovery Workshops to create multiple opportunities for your learners to grasp key concepts. Add a digital program before or after your Science on Wheels program to continue learning and make more meaningful connections between content.

SCIENCE ON WHEELS PROGRAMS

Whole Day Experiences

Science on Wheels Whole Day Experiences bring an entire day of interactive STEM exploration with different programming options to engage every kind of learner. Each Whole Day Experience starts with an engaging **Live Science Show** for the whole school. Then, our educators will visit 6–15 classrooms to lead 45-minutes **Hands-on Workshops**. Classes/groups will also visit our **Pop-up Exhibit** area. Whole Day Experiences last 6–8 hours and serve up to 480 students per day, and for larger sites we can visit for two consecutive days.

			Programming Experiences	es	
		Live Science Show Fun, engaging science experience for a large audience.	Hands-on Workshops 45-minute lesson facilitated by a PacSci educator.	Pop-Up Exhibits Stations focused on self-guided exploration and discovery.	
Themes and Featured Offerings	Space Odyssey: Discover astronomy, and planetary science.	Help our astronaut in training prepare for a trip to the moon and see the power of the vacuum of space.	 K-2: Lighten Up, Your Place in Space 3-5: Plan It: Mars, Cosmic Colors 5-8: Plan It: Mars, Spectacular Spectra, Lunar Logic For all grades: mobile planetarium 	Touch meteorites, identify constellations, investigate gravity on different planets, and more!	
	Blood and Guts: Explore human and comparative biology.	Discover how all of the organ systems work together to make the body work in this birthday party-themed show.	 K-2: Animal Adventures, You've Got Nerve, Bone Zone 3-5: Bone Zone, Piece of Mind, Visual Eyes 5-8: Main Frame, Visual Eyes, Piece of Mind 	Test your balance, tease your mind with optical illusions, assemble skeletons, and more!	
	Engineering: Investigate the engineering design process.	Help our educators design, test, and redesign their innovations and learn about different engineering fields.	 K-2: Machine Makeover, Super Structures, Radical Robots 3-5: Bridge the Gap, Get in Gear, Radical Robots 5-8: Bridge the Gap, Enviro-Sleuths, Wired Up 	Construct an arch bridge as tall as you, manipulate marble mazes, make wheels turn using engines and gears, and more!	

Visit pacsci.org/education/science-on-wheels to view the full list of programming options.

Partial Day Experiences

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 classrooms or groups, choose **Hands-on Workshops**. For groups with a wide range of knowledge and time seeking high levels of interaction, we recommend the **Pop-up Exhibits**, which are a great option for libraries and community events. Partial Day Experiences last 1–4 hours.

Live Science Show	Hands-on Workshops	Pop-Up Exhibits
Fun, engaging science experience for a large	45-minute lesson facilitated by a PacSci	Stations focused on self-guided exploration
audience.	educator.	and discovery.
Radical Reactions : Learn what makes a chemical change different from a physical change with foaming, fiery colorful chemistry.	 K-3: The Force, Lighten Up, Sand-tastic! 4-8: Spectacular Spectra, Material World 	Physics on Wheels : Explore lenses, investigate the push and pull of magnets, test simple machines, and more!

Individual components from Space Odyssey, Blood and Guts, and Engineering themed programs are also available as Partial Day Experiences, depending on scheduling availability.

Visit pacsci.org/education/science-on-wheels to view the full list of programming options.

PROGRAMMING DELIVERY MAP



1	Local	2	Western Washington Regional	3	Mountain and Eastern Regional
 Whole-day experiences year-round Partial-day experiences year-round 		 Whole-day experiences year-round Partial-day experiences may be available seasonally 		Whole-day experiences seasonally: • September–early November • March–June	

Email our registration team at edprograms@pacsci.org to learn what is available in your area.



FIELD TRIPS

A trip to PacSci is a valuable learning experience for students of all ages in Washington. Our hands-on exhibits, shows, and innovative programs ignite students' curiosity for science in a day of exploration meant to enhance your curriculum and spark lifelong interest in science, math, engineering, and technology. Paired with our new virtual program offerings, our field trips are sure to make a lasting impression on your students. Visit our website to explore our educator pre-visit guides.

EXHIBITS



Hands-on Exhibits

PacSci is home to hundreds of interactive exhibits designed to enhance your curriculum and engage students through informal scientific inquiry. Exhibit categories include environmental and Earth sciences, the physical sciences, engineering, life sciences and more.

Adventures with Sound

Adventures with Sound explores how sound can be seen, felt, and heard through 13 hands-on interactives. Experiment with pitch and tone as you explore what sound waves are and how they form through various elements, including a 10-foot xylophone, a 23-foot-tall torsion wave, and a laser harp!

Beyond Human Limits



Available October 7, 2023–April 21, 2024

GET UP, TRY AGAIN, PUSH FURTHER! Welcome to the thrilling world of extreme sports. Visitors are challenged to jump, fly, dive, and climb in this spectacular exhibit. Beyond Human Limits is developed and produced by Science North in partnership with the Ontario Science Centre.

Bodyworks

Available May 2024

Body Works is all about human physiology. Students can explore the similarities that make us human and the differences that make us individuals. Students can investigate the systems that make us work from bones, muscles, the heart and more.

Destination: Outer Space

Reopening September 16, 2023

What is space really like? What is out there and will humans ever really be able to thrive beyond earth's atmosphere? Through hands-on interactives, explore what scientists have learned, from discoveries in the Milky Way to the conditions in interstellar space.

Happy memories were made with friends and parents while having a wonderful educational experience.



Dinosaurs: A Journey Through Time

Travel back in time to meet dinosaurs from the Mesozoic Era and learn all about these majestic creatures. Discover what your favorite species ate, how they interacted with one another, where their fossils are located and more! Guests can even stand in the footprint of a giant duckbill dinosaur!

Salt Water Tide Pool

Discover and explore marine life that lives in tide pools at regional beaches. Learn about these local residents while experiencing how they act and what they feel like. See the animals move around while they react to the world around them

STEM Career Exhibit



Opening December 1, 2023.

What does it mean to work in STEM (Science Technology Education Math)? Successful careers in STEM have many faces. In our new exhibit based around careers in STEM, explore how science is a part of our daily lives and what you could do to be a part of it too.

Tinker Tank Makerspace

Design, build, test and repeat! Test your hypotheses and create your own innovations in our hands-on makerspace that offers daily engineering and design challenges. We'll provide the tools you need to persevere through roadblocks, discover new approaches, and solve fun tasks.

Tropical Butterfly House

Enjoy year-round sunshine as you witness hundreds of tropical butterflies from South and Central America, Africa, and Asia fly, sun, and feed among tropical flowers. See new butterflies emerge in the chrysalis viewing window.

IMAX® DOCUMENTARIES



PacSci is the home of Seattle's biggest movie screen, the Boeing IMAX Theater, as well as PACCAR IMAX Theater. Our 3D movies are brought to life by stateof-the-art IMAX Laser technology, putting you right in the action. Below is just a sample of our movie offerings.

For a complete list of IMAX documentary movies and accompanying educator guides, visit our website.

The Arctic: Our Last Great Wilderness

Imagine a place in the far north of Alaska that is vast, wild, and magical: where one of Earth's greatest natural spectacles unfolds. Journey with National Geographic photographer Florian Schulz on his five-year quest to film the elusive 200,000 strong Porcupine Caribou herd as it migrates to the Arctic Coastal Plain, one of the longest animal migrations on earth.



Dinosaurs of Antarctica

From the Permian to the Jurassic, journey to the south polar landscapes of Antarctica hundreds of millions of years ago. Roam the primitive forest and thick swamps with bizarre dinosaurs and colossal amphibians. Join intrepid Antarctic scientists on a quest to understand the ice continent's profound transformation over deep time. Welcome to the lost prehistoric world of Gondwana... welcome to Antarctica.

Hubble 2D

Experience never-before-seen flights through the farthest reaches of the universe, and accompany spacewalking astronauts on some of the most difficult and important endeavors in NASA's history. In May 2009, the crew of the Space Shuttle Atlantis launched a mission to make vital repairs and upgrades to the Hubble Space Telescope, the world's first space-based observatory, 350 miles above the Earth. An IMAX camera was carried on-board, operated by the shuttle astronauts. It captured stunning sequences of the five intricate spacewalks required to make those repairs.



Wings Over Water

As the glaciers retreated at the end of the last ice age, they left an astounding gift of connected rivers, lakes and wetlands across the heartland of North America. Today, these largely unknown water highways remain an oasis for sustaining wildlife. *Wings Over Water* recounts the epic journeys of three amazing bird families—the Sandhill Crane, the Yellow Warbler, and the Mallard Duck—with extraordinary footage of their fascinating behaviors.

SHOWS



Planetarium Available Fall 2023

Field trip experiences in the Willard Smith Planetarium allow students to dive even deeper into space science and discover astronomy in an immersive environment. Each show is live and interactive, introducing your learners to the wonders of the night sky while fostering wonder and curiosity about our universe.

Note: Planetarium programs will begin operating in limited availability Fall 2023. For Planetarium inquiries, please reach out to **edprograms@pacsci.org**.



Laser Dome Grades: K-12 Duration: 30 minutes

One of the largest in the world, PacSci's Laser Dome packs 10,000 watts of concert sound and dazzling imagery into a one-of-a-kind experience. Immerse yourself in the brilliant visuals and music of a live show. Stir the imaginations of your students with brilliant laser imagery performed live to popular and kid-fiendly music tracks.



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Our students loved the different activities—the video, laser show, and exhibits.

Digital Learning Links

Learning has greater impact when it extends beyond a single experience. PacSci's digital connections link Field Trip experiences to Digital Discovery Workshops to create multiple opportunities for your learners to grasp key concepts. Add a digital program before or after your Science on Wheels program to continue learning and make more meaningful connections between content.



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