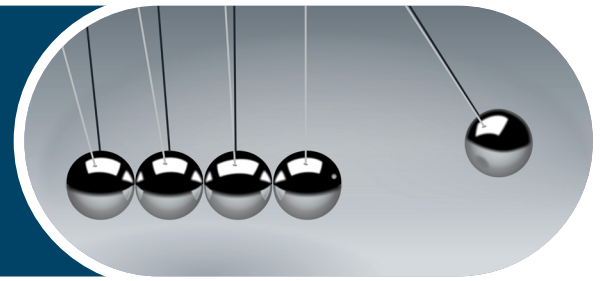


# PHYSICS TEACHER TOOLKIT

Grades K–8



Dear teachers,

Thank you for welcoming Pacific Science Center's Science on Wheels Physics program into your school! Please enjoy these additional resources in your class or to send home with families to help students continue to build on the themes addressed during their Science on Wheels day.

## AFTER YOUR SCIENCE ON WHEELS VISIT

### DISCUSSION PROMPTS

*Lead a 5–10 minute group discussion after your Science on Wheels visit.*



- What did you like best about the Science on Wheels Physics program?
- Physics is the study of movement and energy. Were there any things we learned about today that you didn't realize counted as physics?
- Physics can be found in many daily activities. You might use energy to heat up a meal or turn on a light. And you might use movement to get to school or play a game. What are some examples of movement or energy you use in your daily life?
- Physicists ask lots of questions about movement and energy. For example, a physicist might ask whether it takes more energy to pedal a bike with big or small gears, whether balls always roll downhill, or whether the energy of sound waves travels faster through water or air. What physics questions do you have? How do you think you could design a test to learn the answer?



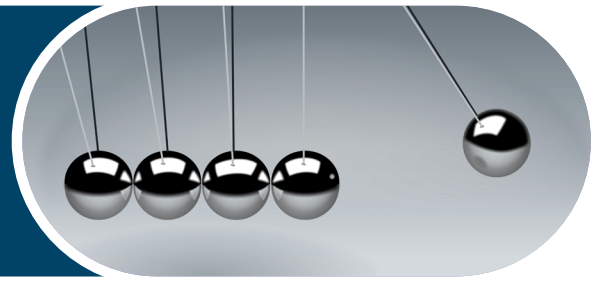
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Grades K–8



## ADD ON A DIGITAL DISCOVERY WORKSHOP\*

We recommend adding a paired Digital Discovery Workshop to deepen the impact of your students' Science on Wheels experience.

- Digital Discovery Workshops are **included** for low-income groups, and \$250 for general groups. Receive a 10% discount when you book three or more Digital Discovery Workshops.
- 40-minute live, virtual programs for up to 100 students. Book as many Digital Discovery Workshops needed to reach every participating student.



### Push, Pull, Physics (Grades K–2):

A journey into physics to investigate the effects of pushes and pulls. Discover how these forces move the world around us while reinforcing concepts from the Science on Wheels visit. [Follow this link](#) to select a date and time\*.

### Forces of Energy (Grades 3–8):

Explore how energy makes things move, change, and grow. Follow the flow of energy to see how forces transfer it from place to place, building on key ideas from your Science on Wheels day. [Follow this link](#) to select a date and time\*.

*\*Note: while the scheduling page recommends booking the digital workshop prior to your Science on Wheels day, we are more than happy to accommodate groups attending after their Science on Wheels experience.*



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Grades K–8



## ACTIVITY GUIDES AND VIDEOS

*These optional extension resources help students enhance their observation skills and connect to their Science on Wheels experience. These can be used within the learning space or shared with students to do at home with their families.*

### ACTIVITY GUIDES

- **Ball Bounce | Rebota La Bola:** Do all balls bounce in the same way? Discover materials and structures' different characteristics. Activity time: 15 – 30 minutes.
- **Boats Afloat | Barcos Que Flotan:** Explore buoyancy and gravity by designing a boat using the engineering processes of design, test, and redesign. Activity time: 30 – 60 minutes.
- **Dancing Salt | Sal Bailarina:** Can you make salt dance using only a homemade drum? Activity time: 10 – 20 minutes.

### CAREER VIDEOS

- **Physics: Searching For The Axion with Michaela Guzzetti:** Meet Michaela Guzzetti, a PhD student at the University of Washington. Learn about her research searching for the mysterious axion, a possible dark matter particle. See how physicists “listen” for dark matter using super-cold experiments and hear Michaela answer PacSci camper questions about physics research. | Video length: 8 minutes.
- **Energy: Powering Our Community with Brian Tyson:** Meet Brian Tyson, Manager of Clean Energy Planning and Implementation at Puget Sound Energy. Hear about his path into STEAM and his work with our region's energy grid to transfer energy to our communities. Discover how that energy supports our daily lives and hear Brian answer student questions about the grid. | Video length: 7 minutes.



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## READING LIST

- Check out the [Science on Wheels: Physics reading list](#) for STEAM books related to the program themes.



For more activities with simple materials, check out the [Curiosity at Home / Curiosidad en Casa](#) web page. Explore activity sheets by age group and topic in both English and Spanish.



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