

Pacific Science Center Grants

1. **Purpose:** To ignite curiosity and fuel a passion for discovery, experimentation, and critical thinking for students and communities throughout Washington state and the Pacific Northwest through interactive science, math, and engineering curriculum. Science on Wheels has been serving students and schools, as well as the larger community, for over 40 years.
2. **Description of services provided:** Through legislative funding, Science On Wheels will continue to provide science programming in schools and community settings and improve science education offered to schools in Washington state by:
 - **Upgrade materials and equipment in the Space Odyssey Program, including purchasing a new portable planetarium dome, three new planetarium systems, and upgrading the planetarium computers and software.**
 - Over the course of the year, three full planetarium systems, controllers and planetarium domes were purchased and integrated into program use. The new systems allow for updated curriculum, additional content, and more flexible use with students.
 - Updated sound system equipment used in the school day assembly presentation. This increases the functionality of the program, and a new camera allows large full school audiences to see the tabletop demonstration with increased detail.
 - The Space Odyssey van itself received a new full graphic “wrap” this year with OSPI funding; with visuals about space and space exploration, the van now clearly represents the program in a visually interesting and curiosity inducing way.
 - **Upgrading and updating curriculum, programming, and lesson activities in the Space Odyssey Program. Legislative funding will cover staff time for these efforts.**
 - All of the planetarium lessons previously offered as part of the outreach program, as well as all currently offered planetarium shows at Pacific Science Center have been input into the new planetarium systems.
 - New materials were purchased for the Space Odyssey van Assembly, increasing functionality and making for a better student experience.
 - Hands-on materials were purchased to increase the interactive opportunities in the exhibit area of the outreach program.
 - Educational supplies for several lessons were purchased including a new robotics lesson about coding and the use of rovers in planetary exploration.
 - **Training educators on the use and delivery of these new and upgraded components.**
 - After all planetariums were purchased and lead staff learned their operations, the full staff of 10 educators were trained in how to use the computer systems, as well as the operating hardware and software including the universal console and iPad controller. Educators also received trainings on space science content knowledge. All systems and new staff knowledge were utilized in program

delivery for the final 3 months of the grant, April to June, when the majority grant funded schools were visited.

- **Offsetting costs for delivering of these programs to at least 15 schools during winter and spring of 2018.**

- 15 Title 1 schools received a fully funded visit from the Space Odyssey van. The schools are located in 11 different counties, and in 15 different school districts across the state. The schools that received the fully funded visit are:

School	City	District	County
Anderson Island Elementary	Anderson Island	Steilacoom Historical	Pierce
Cosmopolis Elementary	Cosmopolis	Cosmopolis	Grays Harbor
Deer Park Elementary	Deer park	Deer Park	Spokane
Hawthorne Elementary	Everett	Everett	Snohomish
Inchelium School	Inchelium	Inchelium	Ferry
Lake Louise Elementary	Lakewood	Clover Park	Pierce
Kendall Elementary School	Maple Falls	Mount Baker	Whatcom
Mattawa Elementary	Mattawa	Wahluke	Grant
Oroville Elementary	Oroville	Oroville	Okanogan
Renton Park Elementary	Renton	Renton	King
Marcus Whitman Elementary	Richland	Richland	Benton
Cedarcrest Jr High	Spanaway	Bethel	Pierce
Whitman Elementary	Tacoma	Tacoma	Pierce
Tonasket Elementary	Tonasket	Tonasket	Okanogan
Lincoln Elementary	Toppenish	Toppenish	Yakima

3. **Criteria for receiving services and/or grants:** We provided Space Odyssey Programming to 15 Title 1 schools this year. These schools received a completely free visit.

Beneficiaries in 2017-18 School Year:

of School Districts: 15
 # of Schools: 15
 # of Students: 4326
 Other: 00

of OSPI staff associated with this funding (FTEs): 00
 # of contractors/other staff associated with this funding: 00

FY18 Funding: State Appropriation: \$240,000
 Federal Appropriation: \$0.0
 Other fund sources: \$0.0
 TOTAL (FY18) \$240,000

4. Are federal or other funds contingent on state funding? If yes, explain. **N/A**

5. State funding history:

Fiscal Year	Amount Funded	Actual Expenditures
FY18	\$240,000	\$239,396

6. Number of beneficiaries (e.g., schools, students, districts) history:

Fiscal Year	15 schools
FY18	33,330

The 15 schools that received a fully funded visit are located in 15 different cities and school districts, in 11 different counties, totally 4326 students.

7. Programmatic changes since inception (if any):

With OSPI approval, we modified the project scope of work from the original budget proviso (in #11 below) to the following at the beginning of the grant term:

Pacific Science Center will purchase a new portable planetarium dome and three new planetarium systems, as well as upgrading the planetarium computers and software.

These portable systems will be added to our outreach vans. Outreach education staff will upgrade curriculum, programming and activities for those vans, as well as train outreach educators to effectively use and deliver these new components. We will also offset costs for delivering the new programs to at least 15 schools during the winter and spring of 2018.

With OSPI approval in June 2018, we adjusted the budget to reflect the correct program pricing, increased the number of planetarium domes to be purchased and added a van wrap.

8. Evaluations of program/major findings:

While 15 schools (and 4326 students) received a fully funded visit from the Space Odyssey program this year, many additional students were beneficiaries of the new and updated programs and materials. During the 2017-2018 year over 23,000 students received Space Odyssey programming in the form of the assembly, exhibit set, and/or the planetarium workshops; 13,000 of those students are in Title 1 schools. Assuming consistent attendance, we anticipate over 18,000 students will benefit from the new and updated program in the 2018-2019 school year.

9. Major challenges faced by the program:

The Space Odyssey program was scheduled for many schools this year, the most of any program we offer, presenting a scheduling challenge for integrating the updates and improvements into the program. The new planetarium systems, while purchased early in the grant year, were not received until the spring. As a result, the program delivery and

many of the lesson upgrades were made in the late spring, as van and prototype schedules allowed.

Additionally, the area of space science has frequent updates as new mission findings and images are made public. Keeping content for students updated, and keeping teaching staff aware of these changes is difficult; the new planetarium systems will make these updates much easier.

10. **Future opportunities:** The new planetarium systems will enable the Science on Wheels program to deliver great programming to schools in Washington for many years to come. By upgrading the outreach planetariums to match the same system used at Pacific Science Center's planetarium, program content, images and lessons can now easily be shared between programs, allowing more up-to-date content to be shared with students with less preparation time. This flexibility has already been taken advantage of, when the Outreach group took an existing program that had been done at Pacific Science Center, and quickly modified it to deliver a teacher PD program at Olympic Educational Service District. Creating and programming this customized planetarium lesson would not have been possible with our previous system.

The new system will also enable us to very easily add content to lessons in the future. NASA mission images will be integrated into the planetarium software with each planetarium software update, allowing us to update lessons and share current research and mission highlights with students.

Additionally, the new planetarium control systems for these planetarium allow much greater user flexibility when navigating the solar system and universe. With the new universal controller on the iPads, navigating to specific spots on planets and moons is much easier. This also allows us to be more flexible and easily deviate from pre-scripted lessons as we respond to student questions and comments with visuals and models. This will be especially useful as we work in the coming year to expand our programming to reach high school students.

For the classroom based lessons, many student educational supplies were replaced and updated, and a new set of robotics supplies was purchased, allowing the creation of a new lesson on off-planet rovers. This lesson will encourage computational thinking, as well as introduce students to coding and technology at early ages, while also learning how robotics are utilized in space exploration. Computational thinking and increased technology access for students in our programs are an area with much opportunity for growth in the future.

11. **Statutory and/or Budget language:**

Budget Proviso: SSB 5883 Section 501(44) - \$240,000 of the general fund--state appropriation for fiscal year 2018 is provided solely for a grant to the Pacific science center to continue providing science on wheels activities in the schools and other community settings. Funding is provided to assist with upgrading three planetarium computers and

software and to assist with purchasing and outfitting three vans with new traveling planetarium exhibits.

12. **Other relevant information:** The flexibility of the new planetarium systems, in addition to allowing the easy addition of new content and ability to address student's questions in the moment, is also beneficial for staff training and professional development. With the ability to share content between the various Science Center planetarium platforms internal programs, resources and knowledge can be shared, increasing the breadth and depth of programs we can offer to schools in the outreach program.

Planetariums continue to be one of the most popular individual lessons offered by Science on Wheels outreach program, in part due to funding from OSPI. Given its popularity, we grateful for the opportunity for the upgrades and new materials.

13. **List of schools/districts receiving assistance:** See OSPI [website](#).

14. **Program Contact Information:**

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