



VIRGINIA SPACE GRANT CONSORTIUM

Old Dominion University Peninsula Center, 600 Butler Farm Road, Suite 2200, Hampton, VA 23666, (757) 766-5210

Virginia Space Grant Consortium Receives NASA Funding Award for NASA Space Grant Plant the Moon Challenge Project

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NASA has announced just over a one-million-dollar [award](#) to the [Virginia Space Grant Consortium](#) and partners for the NASA Space Grant Plant the Moon Challenge project through the NASA Space Grant K-12 Inclusiveness and Diversity in STEM initiative. The proposal is one of four awards made nationally through the NASA Space Grant KIDS funding opportunity which focuses on providing experiences for students to learn about NASA's Artemis mission to return human explorers to the Moon and to Mars. Understanding how we can use lunar soils to grow crops for future human missions is one of the next great steps in supporting a return to the Moon.

The Challenge will significantly extend the reach of the Institute of Competition Science's current international [Plant the Moon Challenge](#) in a six-state region that includes partnerships with the [North Carolina](#), [South Carolina](#), [West Virginia](#), [Florida](#), and [Puerto Rico](#) Space Grant programs. Virginia Space Grant Consortium is serving as project lead.

Plant the Moon Challenge (PTMC), developed by the Institute of Competition Sciences, is a teacher-led student global science experiment, learning activity and inspirational project-based learning challenge to see who can grow the best crops using lunar regolith simulant. Participating educators receive a PTMC Activity Kit for each team of about ten students including lunar regolith simulant, a Project Guide, and a pH meter. Student groups work together to design their plant growth experiments using the simulant. Experiment variables may include the plant growth setup structure, amount of water used, and nutrients added to the regolith simulant. Teacher-advised teams use the Project Guide to define their plant growth experiments. The grow period is eight weeks. For two weeks before the grow period, throughout the grow period, and for two weeks after the grow period, teams are engaged in weekly activities and virtual events that supplement their hands-on project activities with STEM learning activities connecting them with NASA Artemis-related content.

Piloted in 2021 and 2022, the Challenge has engaged over 4,000 students in its first two years. Through this grant, at least 13,080 additional students from targeted underrepresented and underserved populations and 510 formal and informal educators who instruct these students will be engaged with this authentic, Artemis-related, STEM learning experience in the three-year project period.

The Virginia Space Grant Consortium was inspired to propose this project based on its experience engaging teachers from 16 schools across the state in a Plant the Moon Challenge in spring 2022. Virginia Space Grant Consortium Director Mary Sandy notes, "Our Virginia teachers and students were enthusiastic and very immersed in the Challenge. Three of the schools, Forest Middle School in Forest, Va., Chesterfield Technical Center in Chesterfield, Va., and Academies of Loudoun in Leesburg, Va., won top prizes in the international Plant the Moon Challenge." Cindy Watson, a teacher from Forest Middle School notes, "Plant the Moon Challenge is so much more than growing plants! We grew our curiosity in all things science while also growing our ability to work as a team and become better students. The pride my students took in taking care of their plants and the sheer joy of growing "something" successfully was priceless."



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VSGC and program partners are excited to work with the Institute of Competition Sciences to allow more students and educators to participate while adding a materials stipend for participating teachers, expanding professional development for educators, enhancing speakers and activities for participants, and providing experiential prizes in each state and at the regional level. The project will be externally evaluated.

The project's Plant the Moon Challenges will be offered in the spring semesters of 2023, 2024, and 2025. Many participants for spring 2023 have already been identified including, schools, school systems and informal organizations such as Boys and Girls Clubs, 4H and Future Farmers of America. The project has broad appeal to science, biology, botany, earth science, and agricultural learning among other disciplines. For more information, contact: vsgc@odu.edu.



Photo 1 Caption: This Plant the Moon Challenge team grew radishes in lunar highland simulant in their high school science lab and varied the light source lumens and nutrient amendments in their experimental design.



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Photo 2 Caption: The experimental design for this high school Plant the Moon Challenge team included two separate trials conducted within the 8-week grow period to test the optimal lighting and soil amendment conditions for their radish crops grown in lunar highland regolith simulant.



Photo 3 Caption: Students from Chesterfield Career and Technical Center in Chesterfield, Va. calculate plant growth measurements and monitor environmental conditions for their basil plants for the Plant the Moon Challenge.

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