



Plant the Moon
CHALLENGE

Program Brief | 2020



Background

NASA's Artemis Program is the United States' new initiative to return to the Moon. Artemis will explore more of the lunar surface than ever before. However, returning humans to the Moon is challenging in many ways. One of those challenges is how to feed your crew.

Bringing all of the food and water with you that is needed for long-duration human missions becomes a problem, particularly as you increase the length of stay or size of the crew. **Using local resources** on the Moon could greatly enhance our capabilities to explore our celestial neighbor.

This begs us to ask the question, *can you plant the moon?* Can you grow crops in lunar regolith (a.k.a. soil to us earth-lubbers)? What nutrients, fertilizers, or other modifications to the regolith are needed to grow nutrient rich, sustainable food sources for future astronauts?

Understanding how we can use lunar soils to grow crops is one of the next great steps in supporting our return to the Moon! Through the **Plant the Moon Challenge** you can help NASA scientists and the academic community at large learn the best lunar crop conditions by completing your own Plant the Moon Challenge and sharing your results with the world!

The Plant the Moon Challenge is a global science experiment, learning activity and inspirational competition to see who can grow the best crops using lunar regolith simulant.



Project Overview

Design and conduct a set of **plant growth experiments using lunar soil simulant** from the University of Central Florida's CLASS Exolith Lab – part of a NASA virtual institute at UCF! Report your experimental parameters and results to help NASA scientists understand how to use lunar soil to provide nutritious crops for future Moon missions! All participants with completed projects will be invited to showcase their projects at a virtual symposium with NASA scientists, program executives, and other dignitaries.

Project Kits

- ✓ Lunar Regolith Simulant Pack for up to 10 experiments
- ✓ Project guide and lesson plans
- ✓ Fact sheets on lunar simulant
- ✓ Experimental parameters guide
- ✓ Plant growth research summary
- ✓ pH meter

Teams must define their own experimental parameters such as the structure of the plant growth setup, amount of water used, and nutrients or fertilizer added to the regolith simulant to help support plant growth. **After a 10-week growing period**, teams will submit final project reports and join the global network of researchers helping to expand our lunar exploration capabilities!

Projects will be evaluated by NASA scientists and other researchers based upon a review of the experimental setup and the results of the plant growth. Teams will submit photos (optional videos), and an experiment report. **Best-in-show awards will be provided** to teams with the best plant growth results and experimental design.

All participants with completed projects will be invited to showcase their projects at a virtual symposium with NASA scientists, program executives, and other dignitaries.



Challenge Process

1

Register & pay the project kit fee on the ICS competition platform for the Plant the Moon Challenge

2

Receive the Project Kit & Lunar Simulant

3

Join the Launch Symposium

4

Design and conduct your own Lunar plant growth project

5

Submit experimental results

6

Join webinar with Astronauts and other NASA experts for final presentations and best in show awards



Awards

1

All teams successfully completing a Plant the Moon experiment and report:

A

Invited to a special webinar with NASA experts.

B

Certificates of Recognition.

C

Experimental design review feedback from university and NASA experts.

2

Best in show recognition awards in three categories (middle school, high school & university/professional) for:

A

Best Experimental Design

B

Best Crop Growth

C

Best Evaluation of Results



Timeline



Pre-register to be first in line for project kits at:
www.competitionsscience.org/competitions/plant-the-moon-challenge/





Get Involved:



Learn about lunar simulants with [UCF's CLASS Exolith Laboratory](#)
Contact for more information: josh@competitionsociences.org



Sign Up and Join the Challenge!

[CLICK HERE](#)

