



ARIZONA

REGIONAL SUPPLEMENTARY MANUAL

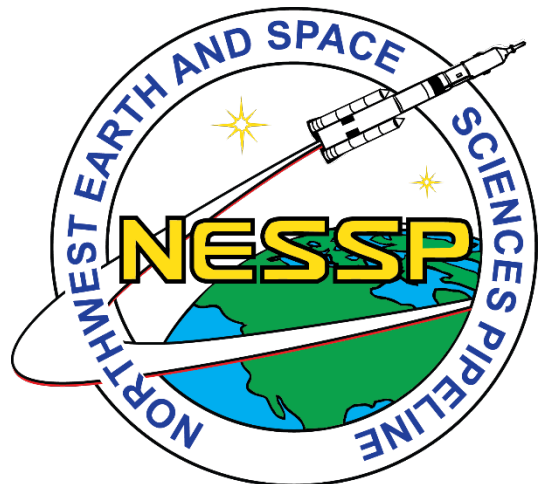
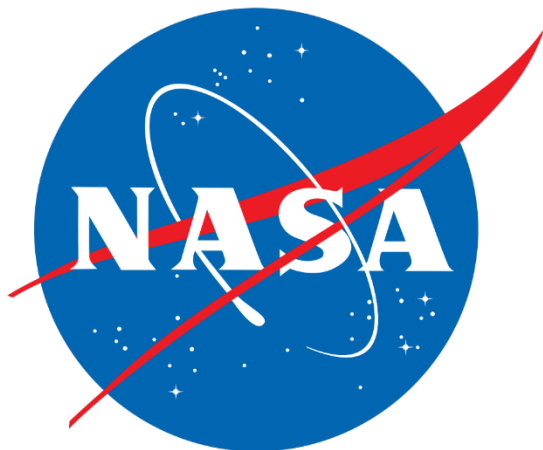


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1 INTRODUCTION

1.1 About the Center for Science Teaching and Learning

For over 25 years the Center for Science Teaching and Learning (CSTL) has partnered with PreK-12 teachers, K-20 students, Native American communities, informal science education organizations and educators, and community groups both locally and nationwide. We are a group of highly successful and recognized STEM educators, evaluators, researchers, facilitators, and writers with over \$12M in current funding from national and state agencies and private foundations. We conceptualize, implement, evaluate and disseminate projects to increase the application of research findings for life-long learning in STEM, thus bridging the gap between research and effective public outreach.

CSTL is a member of the NASA Science Mission Directorate as the lead organization of the **Planetary Learning that Advances the Nexus of Engineering, Technology, and Science (PLANETS)** project. PLANETS is an innovative, collaborative partnership to develop and disseminate out-of-school time (OST) curricular and professional development (PD) modules that integrate planetary science, technology, and engineering.

The Apollo 50th Next Giant Leap Student Challenge leverages CSTL expertise to engage students in technologies relevant for today's society. The challenge also gives students the opportunity to sense the spirit of achievement and exploration exemplified by all those that contributed to the successful landing of the Apollo 11 spacecraft on the moon 50 years ago. CSTL is excited to host the Arizona Regional Hub Challenge on July 19-20, 2019.

Visit our website: <https://nau.edu/cstl>

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1.2 Important Dates & Deadlines

JANUARY, 2019	Official announcement of Apollo 50 th Next Giant Leap Student Challenge
FEBRUARY 1, 2019	ANGLeS opens, Manual released
MARCH 14, 2019	Regional Supplementary Manual released.
APRIL 15, 2019	Local Organization Registration Closes
APRIL 19, 2019	Mission Patch due
MAY 3, 2019	Social media post due
MARCH 30-JUNE 24	Local Organization Challenges and Team Selection
MAY 31, 2019	Individual Team Registration Closes
MAY 31, 2019	Organizations nominate one team to for a Regional Challenge Hub Event
JUNE 17, 2019	Regional Hub Challenge Event invitations issued
JUNE 28, 2019	Teams confirm Regional Hub Challenge Event attendance and submit travel support requests
JULY 12, 2019	Regional hubs respond to travel requests
JULY 16-20, 2019	Apollo 11 50th anniversary week, Regional Challenge Events
AUGUST 5-7, 2019	Winners showcase and tour at Johnson Space Center, Houston, Texas

1.3.1 Summer Camp Schedule

Summer camps will have alternate dates for team nomination, social media posts, invitation and confirmation. All other dates are the same as above. When you register your program as a summer camp, make sure to note this in your registration.

JUNE 24, 2019	Organizations nominate one team to for a Regional Challenge Hub Event. Social media and Mission Patch posts also due.
JULY 1, 2019	Regional Hub Challenge Event invitations issued
JULY 8, 2019	Teams confirm Regional Hub Challenge Event attendance and submit travel support requests



2 REGIONAL EVENT INFORMATION

2.1 Professional Development

Initial PD workshops were provided in February in Flagstaff, Peoria, and Miami. We will provide technical support and orientation via webinars March-June. Check the Schedule in the Arizona resource folder in the ANGLEs Google Drive:

https://drive.google.com/open?id=1bwOX2QvKo_5Ut7BI1gzeUGUCFbt2iU2w

2.2 Support

2.2.1 Funding

NESSP will assist registered teams to participate in crowd sourced sponsorships. The Crowdfunding page is active, and organizations and individuals just need to make sure to note that the donation is for Arizona (and can add a specific school or program if desired):

<https://together.uw.edu/project/13643>

2.2.2 Supply Lending

We have a limited number of free supply kits for Arizona programs and teams that can demonstrate need and strong student participation, particularly in underserved communities, and organizations with greater than 50% free and reduced lunch. If approved, supplies provided at no cost will include one Force1 U49W Blue Heron WIFI FPV Drone OR one LEGO Mindstorms EV3 Education Edition kit. Complete the Scholarship Application found in the Arizona Google Folder (see link above).

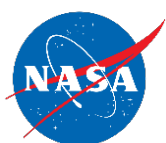
2.2.3 Travel Support

We have limited resources to provide a small travel stipend to assist a few Arizona programs and teams that can demonstrate need and strong student participation, particularly in underserved communities, and organizations with greater than 50% free and reduced lunch. We will announce applications after we know how many teams are participating and if any additional donations have been submitted for Arizona.

2.3 Regional Hub Challenge

2.3.1 Date and Location

The Regional Challenge Event will be held on July 19 (High School) and July 20 (Middle School), 2019, at Northern Arizona University in Flagstaff, AZ. All teams are encouraged to attend both days. There will be additional activities available, including tours to learn about Flagstaff's role in the Lunar Legacy and astronaut training.



2.3.2 Modifications to Challenge Rules

Safety Glasses: All participants must wear safety glasses during the use of drones and robots during practice and in completion of the official challenge.

No-Drone Option: If schools have a district safety or insurance policy conflict, and would not be able to participate in the challenge due to drone flight, then there is a No-Drone option. Instead of using a drone to drop the lunar lander model, students must construct a lander airbag system (no parachutes) and will physically toss the lander onto the lunar map from the same pilot location that drone pilots fly from. Once the lander has come to rest all scoring will be conducted exactly the same as if the lander had been dropped by the drone.

2.3.3 Challenge Field

Drone flight boundaries and safety rules: There will be one judge who stands with the team pilot for the duration of the drone flight. . If the drone passes outside of the flight boundaries, or if flight is deemed to be reckless and unsafe, then the judge will instruct the pilot to stop and land the drone where it is at.

Drones may not pass more than 4 feet horizontally outside of the main flight path and lunar mat, and may not exceed 12 feet vertically.

Audience and observing team members must stay behind barriers, and at least 20 feet away from the Lunar Mat during drone flight.



GLOSSARY

Above Ground Level (AGL)

Apollo 50th Next Giant Leap Student Challenge (ANGLeS)

Drone

Flight Crew

Autonomous

Flight Director

Guidance Officer

Lunar Module

Lunar Rover

Moon

Small Unmanned Aircraft System

DRAFT

