



## NASA EXPLORATION EXPERIENCE

# SPACESUIT GLOVE DEXTERITY

## STUDENT GUIDE

**Welcome, Exploration Experience team members!**



### ACTIVITY BRIEFING

In this activity, you will be performing tests that will help NASA engineers better understand how **spacesuit** gloves might impact the **dexterity** of astronauts working on the surface of the Moon. Be sure to complete your tasks, assist others as needed, and remember to follow the instructions!

This activity is a testing session. You will be working in teams of two. Your team will test spacesuit gloves to see how they influence comfort and efficiency in tasks carried out on the Moon.

### GOOD LUCK!

Caption: Astronaut Clay Anderson, Expedition 15 flight engineer, waves to the camera while participating in a session of extravehicular activity (EVA) as construction continues on the International Space Station. Credits: NASA

Developed in collaboration with AIAA and Students To Launch. Activity photos provided by Students To Launch.



## JOB CLASSIFICATION TASK SHEET

This Task Sheet can be referenced throughout the activity to remind you of your responsibilities. Each member of your team will have the opportunity to take on the role of a Space Suit Engineer and a Test Facilitator.

### Space Suit Engineer

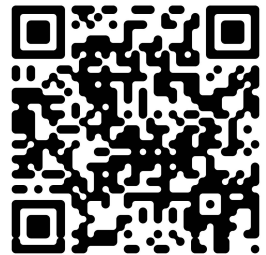
- Try on the spacesuit gloves
- Provide feedback on the fit and comfort of the spacesuit gloves
- Complete as many bolt, washer, and wing nut assemblies as possible in 1 minute without spacesuit gloves
- Complete as many bolt, washer, and wing nut assemblies as possible in 1 minute with spacesuit gloves

Above: An astronaut performing a glove inspection on the International Space Station Credit: NASA

### Test Facilitator

- Use a stopwatch to start and stop the 1 minute (60 second) test trial
- Record the number of bolt, washer, and wing nut assemblies completed by the Space Suit Engineer without wearing the spacesuit gloves
- Record the number of bolt, washer, and wing nut assemblies completed by the Space Suit Engineer while wearing the spacesuit gloves

Watch the Working With Spacesuit Gloves video



[www.youtube.com/watch?v=AqaG4011bh0](https://www.youtube.com/watch?v=AqaG4011bh0)

# MATERIALS NEEDED



Qty	Testing Materials	Qty	Templates / Pages
20	3/8 in x 1 in bolts	1	Space Glove Dexterity Data Recording Sheet
20	3/8 in wing nuts		
20	3/8 in flat washers	Qty	Tools
1	Pair of nitrile (non-Latex) coated gloves	1	Stopwatch
1	Pair of nitrile exam gloves		
1	Pair of cotton or polypropylene liner gloves (cut-resistant gloves)		

Above: CAPE CANAVERAL, Fla. – These newly designed gloves were entries in the 2009 Astronaut Glove Challenge, part of NASA's Centennial Challenges Program, at the Astronaut Hall of Fame near NASA's Kennedy Space Center in Florida. Credits: NASA