

# SPACESUIT GLOVE DEXTERITY: ENGAGEMENT ACTIVITY

## Activity Guide (see student section)

### Job Classification Task Sheet

This Task Sheet can be referenced throughout the activity to remind students of their responsibilities. Each member of the 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 in 1 minute without spacesuit gloves as possible
- Complete as many bolt, washer, and wing nut assemblies in 1 minute with spacesuit gloves as possible

#### 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

### Materials Needed

Qty	Testing Materials	Qty	Templates / Pages
20	3/8 in x 1 in bolts	1	Spacesuit 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)		



## Safety Considerations

- Students should clean up as they go
- Ensure all hardware stays on the work surface and does not roll onto the floor where it could become a slip/trip issue if stepped on. Use a plastic container/dish to store all small hardware so it does not roll away and onto floor.

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## Refer to Steps in Student Guide to prepare for Classroom Implementation

- Practice Hardware Assembly
- Try on the Spacesuit Gloves
- Testing Procedure

# SPACESUIT GLOVE DEXTERITY DATA RECORDING SHEET

Directions: Use this data recording sheet to record your observations, predictions, and test data.

## PART 1: BEFORE YOU START: MAKE A PREDICTION!

### Prediction Table

Team Member Name	# of Hardware Assemblies <i>without</i> spacesuit gloves in 1 minute	# of Hardware Assemblies <i>with</i> spacesuit gloves in 1 minute
Name:		
Name:		

## PART 2: TEST YOUR DEXTERITY

### Test Data Table

Team Member Name	# of Hardware Assemblies <i>without</i> spacesuit gloves in 1 minute	# of Hardware Assemblies <i>with</i> spacesuit gloves in 1 minute
Name:		
Name:		

## PART 3: TEST YOUR DEXTERITY

### Test Data Table

Team Member Name	Notes and observations about spacesuit gloves comfort and fit and how they influence hand movement	
Name:	Comfort / Fit	Influence on Hand Movement
Name:	Comfort / Fit	Influence on Hand Movement

**Describe your data:** How did your **prediction** compare to your actual test results? Does wearing spacesuit gloves influence your dexterity? Back up your response with data from this activity.

**You are a NASA engineer that has been asked to improve spacesuit gloves design.**

Describe three modifications, improvements, or changes you would implement.

1.

2.

3.