

The NASA Experiment

Introduction: This is an activity which will provide students with another demonstration of the benefits and power of team membership.

Materials: NASA ranking sheet (included) – copy one for each person. Answer Key on next page.

Directions:

1. Read the narrative to the participants and have them complete their personal ranking without any discussion and record in Column c on the *NASA Experiment Ranking Sheet*. Items are to be **rank ordered**, one being the most important item and fifteen being the least important.
2. Then break the class into groups of four or five. Have each team reach a consensus and record their decisions in Column e on their *Ranking Sheets*.
3. Share the ranking as provided by NASA experts and have the students record this ranking on the *Ranking Sheet* in Column b. Have students calculate and record their personal differential scores in Column d and their team differential scores in Column f. For example, if a box of matches was ranked 1 and the correct ranking is 15, that is a differential score of 14. If the map of the moon was ranked 10 and the correct ranking is 3, that is a differential score of 7. There are no pluses or minuses.
4. Share explanations for rankings by experts. Add the personal and team differential scores; lower scores are better. Suggested interpretation is: 0-25 = excellent, 26-32 = good, 33-45 = average, 46-55 = fair, 55-70 = poor, 71-112 = very poor.

Narrative:

You are a member of a small space exploration team originally scheduled to rendezvous with a mother spaceship on the surface of the lighted side of the moon. Your small space vehicle has been forced to land 150 miles short of the rendezvous point due to mechanical failure. You and your crew are uninjured by your spacecraft and your equipment sustained major damage. Since survival depends upon your reaching the mother ship, and since you are limited by the amount your small crew can carry, you must choose those items of equipment most critically needed for survival from the items left intact after the crash landing.

Debrief:

Ask the class to analyze the scores. Since teamwork usually provides better results than individual work, most individual scores will be higher than team scores. Hold a discussion after the activity regarding the differences between working alone or working as a team.

Answer Key:

NASA's rankings and the reasoning behind their rankings are as follows:

1. Two 100-pound tanks of oxygen. Most pressing survival need since there is no oxygen on the moon. Without oxygen, the crew will die.
2. Five gallons of water. There is no water on the moon. Replacement for tremendous liquid loss on lighted side.
3. Stellar map of the moon. Primary means of navigation.
4. Food concentrate. Efficient means of supplying energy requirements. The food, obviously, would be for the crew to eat on its journey.
5. Solar-powered FM receiver-transmitter. For communications with mother ship, but FM requires line-of-sight transmission and short ranges.
6. 50 feet of nylon rope. Useful in scaling cliffs and craters and tying injured together.
7. First aid kit containing injection needles. First aid for injured; needles for vitamins, medicines, etc., will fit special aperture in NASA space suits.
8. Silk parachute. Protection from sun's rays. Could be used for the same purpose as the raft, only because of its size, it is more practical. It also has additional rope that could be used if necessary.
9. Self-inflating life raft. Could be used to put objects or injured in and pulled along; CO2 bottle may be used for propulsion.
10. Signal flares. Could be used to let the mother ship or other crew know where you are.
11. Two .45 caliber pistols. Possible means of self-propulsion. Since there is no atmosphere on the moon, the bullets will not travel far.
12. Dehydrated milk. Bulkier duplication of food concentrate.
13. Solar-powered portable heater. Rendezvous points on lighted surfaces of the moon are planned hundreds and hundreds of miles from the dark side. Chances are that if the crew is only 150 miles from the rendezvous point, they are still on the lighted side of the moon and will not need the heater.
14. Magnetic compass. Magnetic field on moon is not polarized; worthless for navigation.
15. Box of matches. Since there is no oxygen on the moon, matches will not light.

Your Name _____ Team Name/Number _____

The NASA Experiment Ranking Sheet

Items	NASA Ranking	Personal Ranking	Differential Score	Team Ranking	Differential Score
1. A box of matches					
2. 50 feet of nylon rope					
3. A silk parachute					
4. Two 100-pound tanks of oxygen					
5. Signal flares					
6. Magnetic compass					
7. Self-inflating life raft					
8. Two .45 caliber pistols					
9. Food concentrate					
10. Solar-powered portable heater					
11. One case of dehydrated milk					
12. Stellar map of the moon					
13. First aid kit w/injection needles					
14. Solar-powered FM receiver/transmitter					
15. Five gallons of water					
Totals	XXXXX	XXXXX		XXXXX	