

Teacher Notes***Background Information***

This activity is designed to be an icebreaker for students participating in programs at the Byrd Polar Research Center. It provides a way to expose students to some of the unique equipment used in alpine (mountain) and polar travel and research. It also allows students to compare alpine and polar environments with the environment in their own part of the world. Lastly, students learn about working as a team.

Instructional Goals

- Familiarize students with equipment used in alpine and polar research.
- Familiarize students with geographic and climatic differences between alpine and polar regions and their own part of the world.
- Familiarize students with the benefits and challenges of working as a team.

Lesson**Task 1: Equipment Matching**

The class is broken into groups of approximately three students. Each group is provided with the equipment list and a common table full of equipment. The first task is to match each object with its name and decide the function of the object. If this activity is conducted off site, a photo of the equipment will need to be substituted for the actual equipment.

The instructor then goes through the table, holding up each piece of equipment. Groups can be asked to share the name they believe is best matched to the object. It is important that students are engaged at this point in the process as they will need to know the names to communicate with one another throughout the task.

The instructor should not share the function of each object. Many of these objects can serve multiple functions in an emergency. Students will need to be creative and resourceful throughout the rest of the tasks. They will eventually learn what functions experts would have for the objects, under both ordinary and emergency situations. Telling students the functions now will spoil the rest of the activity.

Task 2: Individual Ranking & Explanations

Students should be read the prompt, “While returning from an expedition you were leading on Nevado Sajama, the highest mountain in Bolivia in South America, you are on board a helicopter with two other scientists. The pilot reports bad weather ahead and a few minutes later the engine begins to have problems. You have to make an emergency landing, in a snow storm, at 14,000 feet of elevation on the side of a mountain glacier. The good news is everyone is safe. The bad news is you are 150 miles from the nearest major city and no one knows the details of your emergency. What do you do?”

“By yourself, rank the objects 1-20 with 1 being the most important object for your survival and rescue and 20 being the least important object for your survival and rescue. Write your ranking in the column labeled I. You must rank all objects, even if you think that an object is not essential for your survival and rescue in any way. But, you may place a star next to your ranking for any objects that you think are not essential.”

“Be prepared to defend the reasoning behind your ranking!”

Students will write their rankings on the sheet in the column titled I.

Task 3: Group Ranking & Explanation

“With your group, agree on a ranking for the objects just as you did as individuals. As a group, you must reach consensus for your ranking. Using the whiteboards, write your ranking. Next to each object’s name, give a phrase

explaining why the object was or was not important for your survival and rescue. Be prepared to share your ranking and defend your reasoning in a brief presentation!”

Students will write their rankings in column titled G once they have agreed on a ranking. The instructor might need to work with groups as some will function as better teams than others. The instructor might want to make notes for later as the processes of how the teams reached consensus and navigated differences of opinion will be discussed as a class. It might be useful to note different roles that were played by members of the group.

These whiteboards will provide a common work space for student groups and will help facilitate the presentations. Whiteboards that are approximately 3 feet by 2 feet are preferred.

Presentations

Each group will stand up and give a brief presentation on their ranking and reasoning. While the presentations should not drag on, it is important that groups have an opportunity to hear reasoning from everyone.”

Class Rankings Revisions & Explanation (Optional)

The class as whole can go through the process of ranking the objects again. In general, the individual student rankings tend to deviate from the expert’s the most and the class rankings the least.

The instructor can write the class ranking on the board as discussion occurs. It is important not to allow the loudest students to dominate the discussion. How to navigate this discussion varies by class. After discussion has ended and a ranking has been agreed on, students can write it in the column titled C.

Explanation & Comparison with the Experts

The explanation provided by the expert is read and, as it is read, students write the ranking in the column labeled E. There will be some excitement and disappointment.

For the comparison, the expert’s rankings needs to be subtracted from individual rankings and written in the I-E column. The expert’s rankings needs to be subtracted from the group rankings and written in the G-E column. If performed, the expert’s rankings can be subtracted form the class rankings and written in the C-E column. All of the differences should be written as positive numbers (absolute values in other words). If there was a perfect match between the individual or group’s rankings and the expert’s, the differences would all be zero. The greater the differences between the rankings, the higher the number. An example has been provided later in this document.

Each of the values in the three columns (I-E, G-E, and C-E) should be totaled. There is a space for these totals. In general, the total for the I-E column will be the greatest of the three and the total for the C-E column will be the smallest.

Variation on the Scenario (Optional)

Students can be asked to rank the objects 1-20 based on a helicopter making an emergency landing in a remote area in their part of the world. The purpose here is to have students compare similarities and differences between their geography and climate with that in alpine and polar regions.

Processing of the Experience

One of the most important parts of this activity is to process what occurred. While team building might seem trivial, it is very important on alpine and polar expeditions. In fact, it is given the formal name of expedition behavior. The National Outdoor Leadership School identified expedition behavior as including:

- Serve the mission and goals of the group.
- Be as concerned for others as you are for yourself.

- Treat everyone with dignity and respect.
- Support leadership and growth in everyone.
- Respect the cultures you contact.
- Be kind and open-hearted.
- Do your share and stay organized.
- Help others, but don't routinely do their work.
- Model integrity by being honest and accountable.
- Admit and correct your mistakes.

So, many of the same behaviors that help students succeed on a team or in the classroom are critical to **survival** and **success** in extreme environments like alpine and polar regions.

Instead of just giving students the list above, as they might not understand all items on the list, groups can be given time to evaluate their success. Each group can whiteboard how they accomplished the goal (survival and rescue), specifically what worked well and what did not work so well for their group. Were there certain behaviors that group members had that aided the process or hindered the process? Were everyone's recommendations heard by the group or were some people marginalized? Did a leader emerge to facilitate the discussion or whiteboard the results? Did this leader acknowledge the contributions of others? Did everyone contribute to the success and if not what could have been done to change this? Overall, what is your evaluation of your group.

The class discussion should not involve presentations or putting individuals on the spot. Rather, it should be a time to learn from the experience and grow to better understand team (expedition) behavior. If the instructor made notes early about individual or group behaviors, this would be a good time to share them. The class could interpret the success of the behaviors with teacher assistance. Some students will be surprised by the feedback of how their behaviors aided or hindered the process. It will be like holding up a mirror for them.

Appreciation

This activity was inspired by NASA's "Lost on the Moon" activity and a "Lost at Sea" activity that is not attributable to any particular organization.

References

NOLS Leadership Education Project, 1996.

