

# Mission Survival



Life in a hostile environment requires careful thinking and planning to meet human survival requirements. In many respects, Antarctica is an excellent training ground for a long duration, human mission on Mars. Like Mars, Antarctica is barren and typically very cold. Unlike Mars, Antarctica has air, atmospheric conditions fit for humans, and access to water.

You are part of six-person crew on its way to Antarctica to collect meteorites, which are easily found in the white snow. Just short of base camp, the plane develops electrical problems and crashes. Miraculously nobody is seriously injured, but all radio communication has been permanently damaged.

The pilot estimates that the team is approximately a five-day walk from base camp. Another plane with a second crew will be flying out to camp in two weeks.

1. As a class or in groups of six, answer the questions below. You will need to come to consensus on your answers (i.e., complete agreement).

Based on the scenario above, plan what you would do. Your group must reach consensus. Should you stay near the plane or head for the base camp?

2. The items below survived the crash. If you decide to head for base camp, you can only take what you can carry with you to survive until you can get help or be rescued. What items are essential for your survival kit?

Put a star next to the essential items for your survival kit.

- |  |  |
|--|--|
| <input type="checkbox"/> Parachutes (2)                                | <input type="checkbox"/> Twine                             |
| <input type="checkbox"/> Matches (1 book)                              | <input type="checkbox"/> Canned chili (2 boxes of 48 cans) |
| <input type="checkbox"/> Sleeping bags (2)                             | <input type="checkbox"/> Mess kits (6)                     |
| <input type="checkbox"/> Long underwear                                | <input type="checkbox"/> Make-up compact with mirror       |
| <input type="checkbox"/> Water (12 gallons)                            | <input type="checkbox"/> Flare gun                         |
| <input type="checkbox"/> Pick axe                                      | <input type="checkbox"/> Portable radio                    |
| <input type="checkbox"/> Flashlight                                    | <input type="checkbox"/> Thermal boots                     |
| <input type="checkbox"/> Candy bars (1 box of 24)                      | <input type="checkbox"/> Hammer                            |
| <input type="checkbox"/> Fruit (1 crate of bananas)                    | <input type="checkbox"/> Screwdriver                       |
| <input type="checkbox"/> Campstove                                     | <input type="checkbox"/> Nails & screws                    |
| <input type="checkbox"/> Dehydrated food (2 boxes of 4 dozen packages) | <input type="checkbox"/> Duct tape                         |
| <input type="checkbox"/> Scissors                                      | <input type="checkbox"/> Collection bags                   |
|  | <input type="checkbox"/> Shovel                            |



## STUDENT WORKSHEET

- |  |   |
|--|---|
| <input type="checkbox"/> Garbage bags              | <input type="checkbox"/> Pen  |
| <input type="checkbox"/> Canteens                  | <input type="checkbox"/> Pocket knife                               |
| <input type="checkbox"/> Soap                      | <input type="checkbox"/> Thermal jackets                            |
| <input type="checkbox"/> Washcloth                 | <input type="checkbox"/> Compass                                    |
| <input type="checkbox"/> Batteries                 | <input type="checkbox"/> Thermal gloves                             |
| <input type="checkbox"/> Can opener                | <input type="checkbox"/> Map  |
| <input type="checkbox"/> Toothbrush and toothpaste | <input type="checkbox"/> Gun  |
| <input type="checkbox"/> Backpack (6)              | <input type="checkbox"/> Thermal hats                               |
| <input type="checkbox"/> Kerosene (1 gallon)       | <input type="checkbox"/> Ammunition                                 |
| <input type="checkbox"/> First aid kit             | <input type="checkbox"/> Tents (2 two-person tents, 10 pounds each) |
| <input type="checkbox"/> Wool blankets             | <input type="checkbox"/> Toilet paper (2 rolls)                     |
| <input type="checkbox"/> Sunglasses (6)            | <input type="checkbox"/> Jewelry                                    |
| <input type="checkbox"/> Chapstick                 | <input type="checkbox"/> Magnifying glass                           |
| <input type="checkbox"/> Sunscreen                 | <input type="checkbox"/> Paper plates                               |
| <input type="checkbox"/> Cassette tapes            | <input type="checkbox"/> Napkins                                    |
| <input type="checkbox"/> Pocket video games        | <input type="checkbox"/> Cooler                                     |
| <input type="checkbox"/> Journal                   | <input type="checkbox"/> Soft drinks (1 case)                       |

### Reflection & Discussion

3. What items will you leave behind?
4. What items don't belong in the survival kit, but you would be willing to carry on a five-day walk to the base camp?
5. Compare and contrast surviving in a hostile environment like Antarctica to surviving in other places on Earth or in the Solar System, such as the Moon, Mars, a space station, or on an extended mission (two year, roundtrip) to Mars.
6. What was difficult about reaching a consensus? What would make it easier next time?
7. Using a Venn diagram, compare and contrast survival in Antarctica to surviving on the Moon, Mars, or a long-duration space mission.