

# Geography & Mission Planning

## Teacher Version

*Adapted from "The Exploration of Mars: NASA Educational Brief"*

### Introduction & Purpose

The purpose of this activity is to get the team thinking about mission planning and selecting landing sites. Many factors must be considered when planning a mission to another planet, and these decisions are often difficult but very critical because space missions are so expensive. Spacecraft must avoid hazards in order to land safely and continue the mission, and must also land in the vicinity of planetary features of interest. During this activity, your students will make some decisions about landing on a planet with which they are familiar: Earth.

### Objective

Students will find particular latitude and longitude coordinates on a world map. Students will choose landing sites on Earth based on potential hazards and potential findings.

### Materials Needed

- Large world map with latitude and longitude markings
- Pen or pencil
- Idaho TECH Lab Notebook
- Optional: an atlas



### Procedure

There is a list of questions regarding mission planning and choosing a landing site in the **Student Version**. Students are directed to answer the questions as a team, using their map (and atlas, if available). Please encourage them to be creative, but also practical as well. Have the team record the activity in their Lab Notebook.

If the team has also completed one or more of the activities entitled "**Crater Creation**," "**Martianscape**," or "**The Winds of Change**," guide them in connecting concepts from those activities with this activity. Have students explain their thoughts, and record them in their Lab Notebook. Remember, there is not necessarily a correct answer to any of these questions.

- How might the features explored in these three activities -- craters, channels created by water erosion, and features affected by wind -- be related to choosing a landing site?
- Would scientists want to avoid or explore these features? Or both?

If the students enjoy this activity or enjoy being creative, have them continue to explore the topic of landing missions by encouraging them to compose creative writing stories from the perspective of a Martian who has landed on Earth at one of the landing sites they have selected.