



Navigation Expert Instructions

Navigation experts play a very important role in this mission. Here's what you do:

1. Calculate the amount of fuel used to reach three different sites.
2. Choose a site to visit based on a decision graph you complete that compares fuel consumption to mineral density.
3. Use the nav report form to record the site name with a lowercase letter. You also record the fuel consumption.
4. Tell the science/ operations experts which site you'll visit next (see Overview of Teams diagram, 1a) and then give the report form to the communications experts (see Overview of Teams diagram, 1b).
5. Repeat steps 2-4 for the next site.

You need to do two things to prepare for mission day:

1. Complete some math practice problems similar to the ones you'll see on mission day.
2. Complete a mini-mission with your class. A mini-mission is a smaller version of the real mission. It gives you some practice for the real mission. For your role you need to follow the tutorial that teaches you to use the navigation tool. You'll use the same tool on mission day; only the sites and data will change. The mini-mission tool is shown below.

Navigation Tool

On mission day, access the navigation tool at the following website:

<http://www.e-missions.net/flashcom/mars>

Select your team name and "Navigation" from the dropdown menus. The mission commander will give you the password to log in.

The screenshot shows the 'NAVIGATION CENTER' interface. On the left, a 'Map of Martian Surface' displays a color-coded mineral density map with a blue line indicating a path to site 334. Below the map, 'Formulas' are shown for calculating fuel mass and percentage. On the right, a 'Data Table' lists sites 1-5 with columns for distance, fuel percentage, and hematite density. Below the table is a 'Decision Graph' for plotting hematite density against fuel percentage.

SITE	DISTANCE (km)	FUEL %	HEMATITE DENSITY (1-3)	RATING
1				
2				
3				
4				
5				